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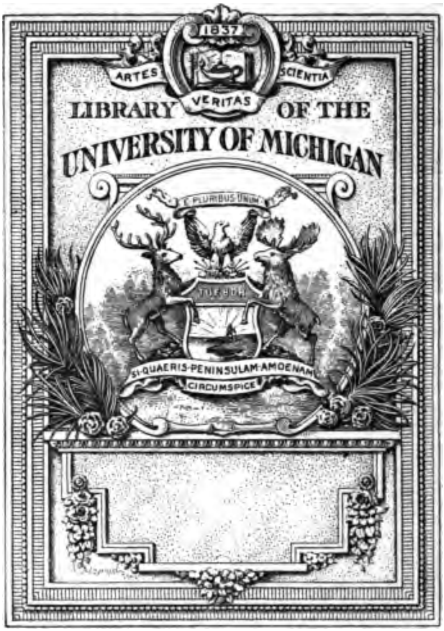

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THE

Philadelphia Journal

OF THE

MEDICAL AND PHYSICAL SCIENCES.

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&c. &c.

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MAY AND AUGUST, 1827.

PHILADELPHIA:
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TO READERS AND CORRESPONDENTS.

Mr. George W. Carpenter, one of our most skilful pharmaceutists, is engaged in a series of experiments on Opium, with reference to its constituent parts and their properties. We expect to present the results in our next number.

We are obliged to a correspondent for his "Case of intermitting disease of the uterus." The affection is well known to practitioners.

In our last number, through inadvertence, credit was given to the Edinburgh Medical Journal for Beaumont's experiments on Digestion; they originally appeared in the American Medical Recorder.

The following papers were received too late for insertion in the present number, they shall appear in our next: Observations on Black Vomit. By S. Henry Dickson, M. D. Professor of the Institutes and Practice of Medicine in the Medical College of South Carolina. On the Pathology of Epilepsy, with cases. By S. Jackson, M. D. &c. &c.

Just as this sheet was going to press, we received from Dr. Mauran, of Providence, R. I. an account of a highly interesting malformation of the human heart. The heart consisted of but a single auricle and ventricle, yet the child lived upwards of ten months. We shall publish the case in our next number, with plates.

We have received the following works:

Principles of Dental Surgery, &c. By Leonard Koecker, M. D. &c. &c.

Dissertatio Inauguralis Medica de Iodinæ usu Medico, &c. &c. auctore Leonhardus Koecker, Mindensis, (from the author.)

A Letter to the Hon. Isaac Parker, Chief Justice of the Supreme Court of the State of Massachusetts, containing Remarks on the Dislocation of the Hip-Joint, &c. By John C. Warren, M. D. Professor of Anatomy and Surgery in Harvard University, &c. &c. (from the author.)

The Medico-Chirurgical Review for January (in exchange.)

The London Medical and Physical Journal for January, February, and March, (in exchange.)

The London Medical Repository and Review for January, February, and March, (in exchange.)

Quarterly Medical Review, for January, (in exchange.)

The North American Medical and Surgical Journal, for April, (in exchange.)

Authors of new medical books, desirous of having them reviewed or noticed in this Journal at the earliest opportunity, are invited to transmit us a copy as soon after publication as convenient, when they will receive prompt attention. Under ordinary circumstances, very considerable delay is caused by the circuitous routes through which they reach us.

Papers intended for publication, should be sent as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "Carey, Lea & Carey, Philadelphia, for the editors of the Philadelphia Medical and Physical Journal." All letters on the *business* of the Journal to be addressed exclusively to the publishers.

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3. An Essay on Morbid Sensibility of the Stomach and Bowels, as the proximate cause or characteristic condition of Indigestion, nervous irritability, mental despondency, hypochondriasis, &c. &c. to which are prefixed, Observations on the Diseases and Regimen of Invalids, on their return from Hot and unhealthy climates. By James Johnson, M. D. of the Royal College of Physicians, &c. Philadelphia, 1827, pp. 154. - - - - - - - - - 138

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THE

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OF THE

MEDICAL AND PHYSICAL

SCIENCES.

ART. I. *Observations upon bloody infiltrations in the Labia Pudendi during, or very quickly after, Delivery, illustrated by Cases.* By W. P. DEWEES, M. D.

DURING labour a variety of accidents may occur to the parts concerned in this operation, among which, the one about to be noticed, is not the least formidable in appearance, nor the least tedious in the cure. The disease to which I allude, is the sudden and excessive distention of the labia pudendi or only one of them, with blood, from some neighbouring vessel having given way, either during the progress, or very quickly after the delivery of the child; or in some cases, immediately after the expulsion of the head.

This complaint is generally confined to one labium; I have never seen it otherwise, though cases are related where it has happened to both. Thus BAUDELOCQUE mentions a case on the authority of SOLAYRES, where the labia were equally affected. This is certainly not usual; and perhaps may be accounted for, from the peculiar nature of its cause; namely, a varicose condition of the veins of the labia and vagina.

This accident, in every instance in which I have witnessed it, has taken place after the delivery of the child, though not always immediately after; but this is by no means constant; as we are informed by Drs. MAITLAND and PERFECT, that the swelling occurred before the child was delivered. Dr. Maitland says, in his patient, he found a soft tumour covering the os externum, very much resembling the distended membranes, which proved to be the right labium pudendi distended to the enormous size of a child's head.

Mr. Burns is of opinion, that this swelling is owing to the rupture of a vessel within the nympha; but it is hardly probable that any vessel belonging to these parts would yield so suddenly such an enormous quantity of blood as is sometimes expended. For as much as five pounds have been discharged; in this case the patient died. In another instance twenty ounces were evacuated, &c. See Burns, James's Ed. p. 60. I am of opinion, that the blood proceeds from vessels situated rather within the vagina; and those which compose the vaginal plexus, immediately behind the corpus spongiosum, are those most likely to suffer during the passage of the child's head, and to furnish this large quantity of blood.

And this opinion appears to be strengthened, by cases in which the accident happens before the delivery of the child; as the part just mentioned, will suffer distention, before the head has entirely escaped through the os externum. Dr. Maitland accounts for this case, by supposing, that "from the pressure of the child's head, and the violent stretching of the parts during the labour pains, that some of the small vessels had burst." Med. Comment. vol. vi. p. 89. Now, it must be evident, that the nymphæ cannot be put upon the stretch while the head is confined within the pelvic cavity; and perhaps the hardness of the head may contribute to the occurrence of the accident; as I have not seen, or found related, a case in which it took place, where any other part had presented.

The vessels which furnish the blood must be of considerable size; since the tumour which constitutes the disease, is very suddenly formed and of enormous size. The cases which I have witnessed, were all of this rapid kind; occupying but a few minutes for the formation of the tumour. Mr. Burns however declares, that "it has been known to advance so slowly, as not to attract attention for two days." p. 60. This may doubtless have happened; since the rapidity of the formation of the tumour must necessarily depend upon the size or the number of the vessels injured. In these slow cases, mentioned by Mr. Burns, it may have arisen from the rupture of a vessel in the nympha.

This complaint has been mistaken for the distended and protruding membranes, and for an hernia; but a careful examination of the deranged part, will soon remove these errors. For it exhibits neither the position nor the colour presented in either of the cases, with which it has been confounded. Its position is lateral, unless both labia are involved; in which case, the natural sulcus must be observable; and its colour is that of extreme lividity, or entirely black, which resembles neither the membranes nor hernia.

Owing to the unequal density of the external covering, and internal face of the labium, the labium becomes irregularly distended; and scarcely any thing is seen, but its excessively stretched internal surface. So much so is this the case, that Dr. Maitland tells us, in the instance he witnessed, "the inside of the labium was turned so much outwards, that on the first application of the hand, the skin and hairs of the part were not felt."

The internal lining of the labium gives way sometimes from the excessive distention it has been made to suffer; this permits a quantity of fluid blood or coagula to escape, which tends very much to diminish the extreme anguish of the patient. In all instances of this kind, much pain is endured; and in some cases it has been so severe as to cause syncope; a case of this kind is related by Dr. Reeve in the ninth volume of the London Medical Journal. Sometimes the tumour bursts before the child is born; Dr. Perfect relates a case of this kind; and the first case related below, may be considered as a similar instance.

But, if this bursting does not take place, as sometimes happens when the size of the tumour is not enormous, the internal face of the labium is sure to yield in a short time, from gangrene taking place through its whole extent. This condition has been preceded in two of the cases I have witnessed, by innumerable vesications containing a yellowish serum, spreading themselves over the whole surface of the tumour formed by the stretching of the internal membrane of this part, but which very soon after the swelling has acquired considerable size, yields, from the loss of life; and the patient in consequence, feels considerable relief.

When the part sloughs, it exposes a large surface of coagulated blood, which quickly becomes decomposed, and yields a stench that is altogether intolerable.

Should the parts not give way, the pain arising from distention is truly agonizing and unceasing; fever of a very active kind, is quickly kindled; delirium sometimes attends, and the woman's life becomes severely threatened. Her sufferings are also augmented by the retention of urine; as its passage is prevented by the tumour pressing firmly against the meatus externus of the urethra. The patient can lie only upon her back, with her knees drawn up, and the thighs widely separated. She cannot bear the pressure of the bed-clothes, nor the lightest applications; therefore it is in vain to offer relief, until the distended parts yield spontaneously, or are made to do so, by artificial means.

The severity of the patient's sufferings, calls for prompt and efficient relief; this must be administered, by both general and local means. When fever attends, blood-letting must be employed to an extent that will insure the reduction of arterial action; and be repeated, pro re nata. With a view to give the earliest opportunity for the extravasated blood to escape, a free incision should be made the whole length of the tumour with a scalpel, or the shoulder of a lancet. I am not certain, whether this plan has ever been insisted on by any writer, when the tumour preserves its integrity; but whether or no, I am convinced at the present moment, it is the best mode of treatment.

Several advantages present themselves from making the incision just recommended; first, we may prevent sloughing, which is always desirable, when these parts are concerned; second, the patient is quickly relieved from the excessive pain which constantly attends this complaint; third, the extravasated and decomposing blood has a better opportunity to discharge itself, and consequently the progress of the cure, hastened; fourth, it will sooner allow of antiseptic applications, to correct the extreme fetor of the putrefying coagula.

The urine must be relieved, as soon as the distention of the bladder becomes troublesome; this may generally be effected, by pressing the enlarged labium gently to one side, and slightly elevating it—should this not succeed, the catheter must be introduced, pro re nata.

The bowels must be purged by any of the neutral salts; but the patient must not be permitted to rise during their operation; cloths must be placed under her to receive the fæces, as well as to catch the urine, when she is about to pass it. If she be permitted to get out of bed, it will create much unnecessary pain, besides incurring the risk of the renewal of the bleeding, by the rude and too sudden separation of a coagulum. The strictest antiphlogistic regimen should be observed. We are told of cases, where the bleeding has been considerable after the part has given way; to arrest which, the wound was crammed with lint, and the vagina itself firmly plugged. I have never seen any bleeding follow the plan just suggested; nor do I see how it can well occur, without attempts have been, too early and too rudely, made to separate, or remove the impacted coagula. This must be carefully avoided; and their separation confided strictly to the powers of the system, unless it be the portions that separate themselves in consequence of the putrefaction of the blood itself, or by very gentle pressure. The detached coagula of course should always be removed, as often as they may separate.

It contributes greatly to the comfort of the patient, as well as being important to the cure, to keep the parts as clean as possible by frequent washing—for this purpose plain soap and water is as useful as any other mere detergent. The charcoal poultice is highly important, and should be constantly employed. The best mode of applying the poultice is to spread over its surface a piece of gauze or very thin muslin, that it may not adhere to the wound. Every loose portion of coagulum should be removed at each dressing, by carefully washing the part, as just directed; and the poultice should be changed every three or four hours at furthest. The wound may be washed with a mixture of the pyroligneous acid and water; and the same acid may be profitably employed in its concentrated form, by applying over the poultice folded linen wetted with it.

Before the wound heals, the patient generally becomes considerably weakened from the excessive discharge of pus, &c. Her strength should be supported by a decoction of bark, elixir of vitriol, and a more generous diet, provided no febrile irritation remains. The following cases, all I have witnessed, will illustrate the routine of practice.

Case I.—1806, April 24th. I was called by Mrs. Rose, the elder, to Mrs. G. who was in labour with twins. At 1 o'clock, P. M. she was delivered of a female child. About ten minutes after its birth, the right labium pudendi became excessively swelled, which gave rise to the alarm of the midwife, and occasioned my being called. The part was found upon inspection by Mrs. R. to be extended to its utmost bearing; extremely black; and nothing but the internal surface of the labium presented itself. Before I arrived, however, the tumour had burst, from the efforts made to expel the second child. When I examined the patient, there was little swelling remaining in the labium, but there was discovered a considerable opening from its superior portion to its insertion in the perinæum. The second child was well situated; pelvis faulty; pains pretty frequent and severe; and great pain was experienced immediately above the pubes. In about fifteen minutes after my seeing the patient, the labium was again distended, and again it discharged itself: this took place four times before the birth of the child. This frequent bursting of the labium, destroyed the connection of the labia with each other so completely, as to leave nothing but the external skin at the perinæum to support the pressure of the child's head when passing through the external parts; this proved insufficient to support the force with which it was urged against it, and an extensive laceration, even to the verge of the anus took place, notwithstanding every precaution which a timely fear could suggest. She lost from the part by this laceration, at least twelve ounces of blood.

25th. Complains of no soreness in the parts; the swelling nearly subsided; is feverish; some slight after-pains; passes no water; ordered a tea-spoonful of the sweet spirit of nitre, and a purgative enema.

26th. She passed water freely after the sweet spirit of nitre and the enema. From this time but little inconvenience was experienced, except that which arose from the lacerated perinæum. She was confined for some time to a horizontal posture, and at the end of the month was pretty well recovered.

This case differs very much from the two about to be related; first, in the blood being discharged from the tumour almost as soon as formed; second, in the integrity of the perinæum being very much injured by the repeated yielding of the labial tumour, and in a laceration being inevitable; third, in the wound healing up in the labia without trouble, in consequence of its cellular structure retaining no coagula.

Case II.—1809, July 2d. Mrs. A. was delivered of her second child, which was very large, after a severe labour of four hours, at 11 o'clock, A. M. She appeared very well after delivery, except the frequent recurrence of severe after-pains, which, however, were relieved by the use of opium. At 9 o'clock, P. M. she complained of much pain, soreness, and tension in the left labium pudendi, which, upon examination, was found to be much swelled; it continued to increase until it acquired a very large size, and quickly became vesicated. The internal lining of the labium was stretched to extreme thinness; was very black; and studded all over with little blisters, which contained a yellowish serum. I made with the point of a lancet a number of punctures, from which issued a considerable quantity of bloody serum; this afforded much relief.

3d. Pain rather less; fever and delirium; no discharge of urine, owing to the pressure of the tumour upon the mouth of the urethra. She was ordered to lose twelve ounces of blood—the urine was relieved by pressing the tumour to one side, and at the same time raising it a little. An incision was made with the shoulder of a lancet through the extent of the inner portion of the tumour; this brought into view the coagula, with which the whole of the cellular structure of the part was completely engorged; much relief followed this operation. A strict antiphlogistic regimen was ordered.

4th. Pain and fever much diminished; urine relieved as yesterday, a considerable discharge of thin, grumous, fetid blood; bowels confined; an ounce of the sulphate of magnesia was given, and the charcoal poultice was directed.

5th. Pain less; urine unobstructed. The salts operated well. The discharge from wound considerable, and extremely fetid. Fever diminished—poultice continued.

6th. Freer from pain and fever; urine free—fetor of the discharge extreme. Four or five ounces of coagulum dislodged by gently and firmly pressing the external and inferior portion of the tumour. Poultice continued.

7th. Nearly free from pain; fetor of discharge diminished; the tumour lessened in size. More of the coagulum discharged by the same means. Fever nearly gone—urine free; bowels confined. Salts repeated.

8th. No pain—can turn on either side—fever gone—fetor less, though the discharge is considerable.

15th. The coagulum entirely evacuated—healthy pus; fever none; fetor gone. From this time the parts healed kindly, and in the sixth week they were entirely well. Her strength much improved by the bark in decoction, and the elixir vitriol. I attended this lady with several children after this time, without the smallest accident happening to the parts.

Case III.—1809, August 30th. Mrs. C. was delivered about 5 o'clock, P. M. of a large first child, after a labour of six hours. The midwife left her about an hour after, as well as is common. At 10 o'clock, the same evening, I was sent for in great haste, in consequence of a large and sudden swelling taking place soon after the midwife had taken her leave. Upon inspection, the left labium was found much distended, very livid, and extremely painful. The distention or tumour not so great as in the preceding case; this however was, perhaps, in a degree, owing to my having been sent for immediately after the part was observed to swell, and its further progress interrupted by my puncturing the tumour in several places, which gave opportunity for a considerable quantity of the thinner part of the blood to escape from them, which afforded some relief, or at least prevented further distention. The part was ordered to be covered with a soft bread and milk poultice, and as she was suffering much pain, a full dose of laudanum was directed.

31st. Still in great pain; high fever, and the tumour as large as it was the preceding evening, and vesicated as in the former case. Directed the loss of blood; made an incision the whole length of the tumour, which afforded much relief. The charcoal poultice was ordered, and the urine relieved as in the former case. Matters remained pretty much the same until the

5th of September. On my visit this day, I was enabled without much force, to express a large portion of coagulum, and did so every succeeding day, until the 15th; considerable quantities had come away at every dressing; and at this time, (the 15th,) the sore was entirely free from it, and presented a large, but a healthy surface. The charcoal poultice was continued until the wound suppurated; it was then, as well as in the other case, dressed with simple cerate. The wound was entirely closed by the end of the fifth week. Her strength was improved by bark, &c.

In neither of the three cases just related, was there any fungus produced, to interrupt the progress of the cure; a circumstance much to the advantage of the patient.

The mode of treatment pursued in these cases, appeared to succeed so well, that I have been induced to relate it pretty much in detail; and I have been more strongly induced to this, as I have met with no account of the particular mode of treating this accident, so painful and alarming to the patient, and embarrassing to a young practitioner. The incision through the extent of the tumour, I am induced to believe to be the best mode of treating it; for we can never expect the extravasated blood to be absorbed; and when the distention of the parts is not very quickly taken off, the whole of the internal membrane of the labium will be sure to slough, I have therefore been led to believe it to be the better practice, though I have no authority for it. It is true that Le Dran mentions his having evacuated twenty ounces of blood by an incision; but the plan does not appear to have been adopted as a general practice. But from the relief it afforded in the two cases in which I employed it, and the opportunity it immediately gives to the confined coagulated blood to escape, and also from its enabling us more effectually to remove the fetor, I am every way convinced it is the proper mode of treating these tumours.

I have ventured to recommend the use of the pyroligneous acid, from analogy, rather than from experience in this particular complaint. But, its efficacy in removing the stench of putrefaction, even in that of cancer, I have repeatedly witnessed; and I recommend it for the complaint in question, with as much confidence as can arise where it has not been absolutely tested.

Art. II. *An Experimental Inquiry into the Vermifuge Powers of the Cedar Apple or Knot.* By Benjamin M. Brocchus, M. D. of the District of Columbia.

About the middle of the month of June last, a communication circulated widely through the public prints, setting forth, in terms of warmest commendation, the virtues of the cedar apple, as "a sovereign remedy for the expulsion of worms."

Many instances of its salutary effects have since been promulgated through the same media, and so respectable are the sources from whence the testimonials in its favour have emanated, that it has become an exceedingly popular remedy in many sections of the country.

Its increasing reputation early suggested to me an inquiry into its vermifuge properties. But a concurrence of untoward circumstances has prevented the execution of as extensive and diversified a set of experiments as would be required for the full investigation of the subject.

Impressed with a conviction of its necessity to the development of truth, and having had no preconceived opinions to support, such experiments as I have been enabled to present, may be relied upon as having been conducted with accuracy and impartiality, and as being detailed with scrupulous fidelity.

I have thought it not irrelevant here to introduce the publication above alluded to, with the view of showing the high estimation in which the remedy is held by those who first proclaimed its efficacy. It originally appeared as an editorial article in a paper called the "Upland Union," and bears the imposing title of

"*Important Discovery.*"

"Mr. Aaron Hannum, a respectable citizen of this county, has discovered a sovereign remedy for the expulsion of worms from children—the remedy is simple, and one that can be obtained at all seasons of the year. The following are a few of the particulars as related to us. He says, while several of his children were going to their grandmother's in April last, on a visit, they, for amusement, took from the limbs or twigs of the Cedar trees, what is generally called the cedar apple or knot. One of them, who had been always very much afflicted with worms, since the age of two years, (now between six and seven,) and for whose relief every thing had been done in the power of a skilful physician, but to no effect, and was then in a very delicate state of health, eat several of the apples—the consequence was, that several worms were expelled from her—the remedy was again administered, and in the course of twelve hours, three hundred and upwards came from her.

"Mr. H. to be satisfied of its efficacy, gave the apples to five of his children, who were all in good health—it had the same effect as upon the first—he also eat several of the apples himself, and the effect was the same.

"Thus, through the medium of mere chance, perhaps one of the best remedies, and the most simple, has been discovered. He recommends to those who feel disposed to try the experiment, that the apples should be eaten nine mornings in succession, fasting; if dry, to be pounded fine and taken in molasses, or eat them just as they come from the tree."

A few weeks subsequently to the appearance of this notice, the following queries were addressed to its author by a writer in one of the New York public journals.

"1st. Does the apple or knot alluded to, grow on the white or red cedar?

"2nd. Is the apple or knot different from the small berry? Is it that sort of excrescence which grows on the small boughs, varying in size from the hazel nut to that of the black walnut? Are those of the description last mentioned, and of last year's growth, something like a potatoe? Are the apples which are perfectly dried, like an orchard apple which is perfectly dried, of any value as a medicine?

"3rd. If the apple is of the kind which I suppose it to be, and which has some moisture still remaining in it, how is it to be used? To be eaten as a fruit or otherwise, and in what quantity?"

To these the following answers were returned:—

"1st. The apple or knot is to be found on the Red cedar, the White cedar tree not being met with, we believe, in this country.

"2nd. The apple bears no resemblance either in shape or size to the cedar berry. It is a sort of excrescence which is to be found at all seasons of the year, on the small boughs or twigs of the tree, 'varying in size from the hazel to that of the black walnut,' bearing a strong resemblance to a netted potatoe. The apple of last year's growth, and perfectly dried, does not look like the orchard apple, and is not as bitter as those of recent growth; but as a medicine, they possess the same virtues, and can be pounded or grated fine and taken in molasses.

"3rd. The apple which contains some moisture can be eaten, like another fruit. The quantity Mr. H. recommends, just as they come from the tree, is one for every year the child is old, to be taken nine mornings in succession, fasting."

From what has been said in the preceding pages, it appears, that the cedar apple or knot, as it is called, is a fungiform product of the red cedar, a species of juniperus, *(Juniperus Virginiana.)* This tree is so plentifully diffused throughout every part of our extensive country, and so familiarly known to most of its inhabitants, that to enter into a particular description of it, would at least, be an unprofitable expenditure of time.

So far as my observations extend, those trees which occupy low and moist situations, are most prolific in the production of the apples, which are also said to abound more, and to attain to a greater magnitude in damp, rainy seasons, than in dry and sultry ones. They are of perennial growth, and have a great diversity of size; some that I have seen being as large as the black walnut before deprived of its outer shell; while others do not exceed that of the common garden pea. Hence, it must be evident, that the dose recommended by Mr. Hannum, is a very indefinite and uncertain one.

This article bears a strong analogy, both in sensible and chemical qualities, to those excrescences produced by the puncture of an insect on the boughs of the different species of the oak; it possesses in common with these a high degree of bitterness and astringency, and is, I believe, the result of a similar cause.

In the following experiments with it, the employment of evacuant medicines was purposely avoided, (except in two very obstinate cases,) in order that no ambiguity, as regards the specific powers of the remedy might exist.

Experiment 1.—C. B. a patient of my friend, Mr. Smith, exhibited all the phenomena arising from worms.

I commenced the treatment of it by the administration of five grains of the powdered apple, in the form of pills, three times a day, beginning early in the morning, fasting. The practice was adhered to for one week, without any other effect, (as stated by his mother,) than that of producing three or four alvine evacuations in the course of every twenty-four hours.

Such ill success in the first application of a remedy, from which I had been led to expect the most favourable results, and that in a case so evidently unequivocal, almost discouraged me from the further prosecution of the subject; but suspecting from the conduct of the mother that a misapplied tenderness for her infant had operated in frustrating my object, I determined to persevere, and to take such precautions as would effectually remove all obstacles to a full and impartial trial.

I ordered two ounces of the apple, reduced to a coarse powder, to be infused in a pint of boiling water, directing a tea-cupful of the infusion to be given every two hours. These directions were, I am perfectly well satisfied, faithfully attended to, but failed in producing the desired effect.

I now directed twenty grains of the finely powdered apple to be given in molasses or syrup, night and morning; which was done for six successive days. At the expiration of this time, no effect being obtained from the remedy, I gave him, about two hours after the last powder, a dose of castor oil, which kept up a gentle action from the bowels until about noon of the following day. As yet there was no appearance of worms, and I determined upon the employment of other vermifuge medicines, which were recurred to with manifest advantage.

Experiment 2.—To John Shields, aged five years, of robust habit, who laboured under many of the symptoms of worms, I gave five grains of the powdered cedar apple every four hours during the day, beginning early in the morning. This was followed up for four days, producing, agreeably to his father's representation, and to use his own language, "copious evacuations of a light straw colour, resembling worms chopped up—the fragments varying in size, and from an eighth to one-half of an inch in length." Unavoidable absence from town deprived me of the satisfaction of inspecting these discharges myself. Rejecting, however, the supposition of the article's possessing the extraordinary power of chopping worms to pieces, and still satisfied of their presence, I continued its use, increasing the dose to ten grains, three times a day.

On the morning of the third day, a worm of the lumbricoid species, about ten inches in length, and of the size of a large goose quill, was discharged at stool, and another of similar magnitude was voided in the afternoon. A repetition of the remedy in doses of twenty grains, night and morning, succeeded on the sixth day in bringing away a considerable number of the same species.

Experiment 3.—To a negro child living in the family of Mr. R. S. who suffered greatly under aggravated symptoms of worms, I gave a tea-cupful of a strong decoction of the cedar apple four or five times during the day, by which the expulsion of several large round worms was effected.

On the morning of the fourth day, twenty grains of the apple in powder were given, with directions to repeat the dose night and morning. Sometime during the sixth day, several other worms of the same kind were voided, and on the ensuing day, fifteen more were passed, and the child permanently relieved.

Experiment 4.—I was requested to see another coloured child who, its mother informed me, had had two severe convulsions; the concurrence of a number of the symptoms by which worms are indicated, led me to suspect them as the cause. I accordingly gave twenty grains of the powdered cedar apple immediately, and ordered a similar dose to be given that night and on the following morning; drinking in the interim, a tea made of the fresh apples. These directions were observed, and she passed six or seven worms, twisted and entangled together, so as to form a ball of considerable firmness. The symptoms disappeared, and the child's health and cheerfulness were restored.

Experiment 5.—During a short visit to the country in the month of September last, a case came under my observation in which the patient, a girl five years of age, had been from her infancy subject to repeated attacks of very unpleasant symptoms, which were invariably relieved by the evacuation of worms.

Previous to my seeing her, she had taken some active cathartic medicine, by which several worms were expelled without affording any sensible abatement of the symptoms. The cedar apple was prescribed in doses of ten grains three times a day; on the third and sixth days, a dose of castor oil was given in the evening, the bowels being in rather an inactive state.

At the end of this time being about to return home, and no benefit having been derived from the remedy, I directed the oil of wormseed to be employed, followed occasionally by brisk purging. This practice, I presume, effected a cure, as I afterwards learned that the child's health was re-established in a short time after I left her.

Experiment 6.—At the same time that I was engaged with the foregoing case, I attended a negro child about four years of age, who had been for several weeks the prey of an obstinate intermittent fever, which, however, was at length subdued, and the little patient in a state of convalescence.

On the fifth or sixth day after the last paroxysm of fever, it was suddenly seized about midnight with violent convulsions, which, with slight intermissions, continued until morning, when I was sent for. I found it labouring under symptoms of vehement gastric irritation—small, quick and corded pulse, spasm of the muscles of the abdomen and legs, uttering feeble and plaintive moanings, with frequent, painful, but ineffectual efforts as if to expel some irritating crudity from the œsophagus or stomach. The most energetic measures were resorted to without delay, for the relief of these distressing affections; but with no obvious advantage until late in the afternoon, when a large round worm was discharged by the incessant retchings—the urgent symptoms were immediately alleviated, but sufficient grounds were yet left for suspecting the presence of more of these animals. The cedar apple was now administered in doses of ten grains, repeated four times a day—after thus employing the remedy for three days, I succeeded by means of it, in procuring the expulsion of a number of large lumbrici. From this time every unpleasant symptom entirely subsided, and I had the satisfaction a few days after, of seeing the little sufferer running cheerfully about, and rapidly recovering from the state of emaciation and debility, induced by the violent shocks his delicate system had so recently sustained.

In addition to the foregoing, many experiments were made both on adults and children, none of whom displayed any of the phenomena of disease—a scrutinous attention being paid to the constitution, consistence and number of the subsequent dejections. These were not observed to have deviated in any respect, from their natural condition, or that in which they existed prior to the administration of the apple. It did not evince any very distinct effects on the arterial system.

A great variety of cases have been reported to me by heads of families and others, in which this article has been successfully, and otherwise employed where worms were supposed to be the source of disease: among others, I am happy to acknowledge the following history of two cases which occurred in the practice of my friend, Dr. John H. Bayne of Maryland, and which were politely communicated by him in a letter on the subject of the cedar apple.

"During the summer past," says Dr. B. "I was called to visit two children who had been for some time in a state of perilous indisposition. They had received much medical attention, but without any good effect, I found them in a state of great emaciation with tumid abdomens and other indications of worms; of consequence, I had immediate recourse to the catalogue of anthelmintics, which I tried in every variety of administration—first I employed them alone, and then alternated the class in every possible way without procuring any ostensible advantage. Having then recently heard of the salutary results from the cedar apple in such cases, I was induced to experiment with it. In order to obtain all possible benefit from it, I premised a cathartic to evacuate the intestines of mucus, and thereby bring the powder more immediately in contact with the little animals. In the space of a few days the intestinal discharges consisted of an almost innumerable quantity of worms, and in a short time the children whose lives had been despaired of by their parents, were perfectly reinstated."

The success attendant upon the employment of the cedar apple in a majority of the preceding cases has, I think, been sufficiently well marked, to establish its pretensions to some activity as a remedial agent; but while this must be conceded, I am by no means disposed to unite my testimony, feeble as it is, with that of other experimentalists, in favour of its "sovereign" efficacy.

Cases have been published, in which the most prompt and wonderful effects are said to have been obtained from the exhibition of very small quantities of the remedy—thus we have detailed, in the publication from which I have made extracts in the early part of this essay, two cases, in one of which, a portion of the dried apple, not larger than a pea, procured the expulsion of twenty-four worms from a lad eighteen years of age, in the space of as many hours; in the other, one-half of an apple discharged one hundred from the bowels of a child seventeen months old.

I must confess that such results, are by no means, conformable to my experience with the medicine; which, although limited, has been collected from tolerably accurate experiment and observation.

The possession of a remedy of so decisive a character in such small doses is certainly a desideratum; but to admit of its existence in this article, I must say, (without wishing to impugn the veracity of those by whom these cases have been promulgated,) requires the exercise of a much greater share of credulity than it falls to my lot to entertain. So far as I have had opportunities of experimenting with it, I have never seen much benefit result from its use, unless when exhibited in doses unpleasantly large, and these frequently repeated.

The dose which I have most generally found to succeed, is from ten to twenty grains two or three times a day, and even in this quantity a steady perseverance will often be required.

On the whole, I think I may on sufficient grounds assert, that it possesses no superiority over other articles which have been long employed in practice with the same intention, and indeed, that it is even inferior in efficacy to many of these.

Concerning its modus operandi, little more, I apprehend, need be said, than that by virtue of the bitter principle it contains, it proves a direct poison to the worms, and by its powers as a tonic, overcomes that condition of the alimentary canal upon which their generation is supposed to depend. I think it also probable, that by its property of astringency, it has some effect in restraining the mucous secretion of the intestines, the accumulation of which, in the early periods of life, is thought to serve as a nidus for the development and support of these animals.

From what has been said, in experiments first and second, it might be supposed that the cedar apple was endowed with cathartic powers, and that to these it was indebted for its efficacy; but subsequent experiments have afforded ample evidence of its entire destitution of such qualities.

ART. III. *Observations on Monstrosities.* By JAMES M. PENDLETON, M. D. Lecturer on Midwifery and Diseases of Women and Children.

PART II.

MR. LALLEMAND, in his "Pathological Observations," describes a case of an acephalous fœtus, and has attempted to account for its production on the idea, that the parts were originally perfect, and subsequently removed by absorption.

The mother, during her pregnancy, laboured under ascites and general anasarca, and to the state of the blood, which the fœtus received from her, he ascribes its condition at birth. Hi[illegible] reasons are, 1st. The unusual quantity of liquor amnii discharg[illegible] when the membranes broke; this, however, is found to vary in most cases, and to be as abundant in well formed fœtuses as in those which are otherwise. During my residence in the New York Hospital as house physician, a female labouring under complicated dropsy in all its forms, was delivered of a healthy and well formed child, and similar cases must be familiar to every practitioner. 2d. The great size of the membranes which cover the brain, with the appearance of their having been distended and torn by the quantity of fluid contained in them. This appearance of distended membranes is not a common one; in a preparation of an acephalous monster, deposited in my collection by my friend Dr. DONNELL, there is no appearance of this kind, the membrane is closely applied to the surface of the small protuberance in the situation of the brain. But granting the facts in Mr. Lallemand's case, we shall be able to offer a more satisfactory explanation of them.

In order accurately to appreciate the cause which produces monstrosities, it will be proper to take a brief survey of the various systems of which the human frame is composed, to ascertain if there is not a priority of development in some, and a dependance of all of them upon one, and to which one consequently we must look to explain these phenomena, to a system by which the body is originally formed, by which it is afterwards supported and nourished, and from which new parts are generated. The functions of animal life are divided by that eminent anatomist, BICHAT, into those of animal and organic life; by the first our connection is kept up with the material world around us, and by the second we are furnished with the means of supplying the continual waste to which the system is liable. In the first are included the brain, senses, nerves, voluntary muscles, &c.; these distinguish animal from vegetable life, in the second class we have those parts which simply require organization and distinguish organic from inorganic substances, such as circulation, digestion, respiration, &c.

To determine the priority of existence of these two classes of functions, we must consider their condition at the period of conception and subsequent growth. The brain has been shown by Professor TIEDEMANN, not to be discernible until the fifth or sixth week, and then it is nearly transparent; the senses can convey no impressions, the nerves and voluntary muscles are neither in a condition to act, the apparent exception to this in the motions of the child in utero is explained by the sympathy which the voluntary muscles hold with the other parts, as in convulsions, where they act powerfully from irritations in the stomach. What is the condition of the organs of organic life? The human fœtus at the moment of conception cannot be examined, but in animals of the oviparous class, the first evidence of existence is found to be a small pulsating point, which is the heart; and we see it throwing its blood into vessels passing out from it. In the human subject the same phenomena take place; the heart is seen to pulsate, and vessels pass from it to convey materials for the growth of the fœtus.

We thus see that the fœtus in utero possesses the organs of organic life, and is gradually perfecting those of animal life, to subserve their purposes at the period of birth, when the fœtus establishes its new relation with surrounding objects: the fact of such progressive development is proved by an examination of fœtuses at different periods of their growth.

Having shown that the priority of development between the animal and organic systems must reside in the latter, we are next to consider whether there are not successive developments in the different parts which constitute organic life. The functions of digestion and respiration are quiescent, that of excretion as of the lungs, kidneys, skin, &c. are inactive; absorption must be proportionably less as the various emunctories by which it discharges its excrementitious matter are closed; this circumstance also conclusively refutes the idea of parts in monsters being removed by absorption, as maintained by professor Lallemand; the only remaining function then of organic life is that of assimilation; this is performed by blood-vessels carrying nutritive matter from the mother; in this function commences the first outline of existence, it is the system from which all the other parts are formed, and to irregularity in it must we look for the explanation of those unnatural productions called monsters. The most universally diffused of all the systems must be that which being destined to supply materials for growth, must be distributed to every part, susceptible of growth; and hence it may properly be denominated the generating system. This system must be in active operation, where we find others comparatively wanting; thus the nerves are scarcely perceptible in bones, tendons, and cartilages, arteries carrying red blood, in tendons and fascia, &c.

Having thus established the generating system of vessels, as that to which we must have recourse to explain the production of monsters, we are next led to inquire whether any thing of order or regularity can be observed in their formation, or whether they are merely freaks of nature, and their form, shape, and appearance entirely accidental. Professor TIEDEMANN has clearly shown, by careful examination of the brains of fœtuses at different periods, that the brain is developed progressively from below upwards; that the parts first formed are the medulla oblongata and cerebellum, and subsequently, the anterior parts, the lobes of the cerebrum; and lastly, the cineritious matter; he has also shown, that if the brain is examined in any stage of its development, it will exactly resemble the brain of some of the lower orders of animals, and hence, in the formation of the human brain, it passes through the different forms of the brains of animals, and if its development be arrested at a particular period, the imperfect organ will resemble that of some animal. Mr. GEOFFROY ST. HILAIRE has carried this idea still further, and founded a classification of monsters upon it; this classification, although the only one approaching to any thing of a scientific character, the author acknowledges requires more observation fully to confirm.

The condition of the nervous system has been resorted to, to explain the formation of monsters; that where the brain, &c. was wanting, the parts which received nerves from it would be deficient from the absence of the nerves; but this is refuted both by the fact that all other parts of the body are perfect in acephalous monsters, and also from the fact of the nerves being formed before the brain.

If at birth then a part is found deficient, are we to presume it has been originally perfect and subsequently destroyed, or that nature has been interrupted in her operations, the evolution of the parts arrested, and at birth presenting the condition in which they were at the moment when the interruption took place.

When we examine the condition of that portion of the arterial system, destined to form the deficient part, we are struck with the enlargement of the arteries which are in the neighbourhood of it; upon this increase of one set of vessels consequent upon a diminution of others, Mr. St. Hilaire has founded a strong argument in favour of the theory of arterial derangement being the cause of fœtal monsters. This fact and its conclusions were first noticed by Mr. SERRES, in an article "sur le system sanguin des monstrosites animales;" he says that when the nutrient arteries of a part have their calibres different from ordinary, the "hypertrophy of one part, and the atrophy of another, antagonize each other;" that is, supposing a certain quantity of nutrient matter to be sent by one common trunk to be distributed to its branches, should any of the branches be obstructed, the others would convey what was superfluous, and consequently be increased in action, in proportion to the diminution in the obstructed part. In order to determine this fact, it is necessary to examine the arterial system of monsters, and to compare the respective diameters of the vessels in their natural state, with that produced by an obstruction in one of them. Mr. St. Hilaire has examined this question, and given plates of the result, showing the comparative size of the carotid arteries; in acephalous monsters he found the external carotid much enlarged, and the internal carotid and vertebrals much contracted; for the same reason, in a fœtus, the internal carotid exceeds in size the external, because the development of the brain at that period predominates; but after birth the reverse is the case, and the external carotid exceeds the internal in size.

If we apply this simple remark to particular cases, we shall have a satisfactory explanation of many phenomena, which, without it, could not be accounted for; thus the increased size of the membranes destined to cover the brain, which led Mr. Lallemand to conclude that the brain had previously filled the membranes, and been subsequently absorbed, is readily explained, as the meningeal artery, derived originally from the external carotid, was increased in activity in consequence of the contracted state of the internal carotid; he further remarks in his case, "all the parts of the face had acquired a considerable development, particularly the lower jaw, which extended considerably beyond the upper." In a case reported by WEPFER, he says, speaking of the cranium, it was found so completely ossified, (in a seven months fœtus,) as to require a hand-saw to divide it. This hypertrophy in the branches of the external carotid, in cases where the internal is wanting, is confirmed by examination of the plates of Mr. St. Hilaire, of the skeletons of monstrous fœtuses, where the bones of the head will be found preternaturally developed.

We may hence conclude that the series of developments which take place in the different organs, formed as they are from the arterial system, must depend upon the condition of that system, and that when a contracted state of the artery is found, the development of that organ will be proportionably diminished;

where the artery is wanting entirely, the corresponding part will also be wanting, and that an enlargement or preternatural activity of an artery, will be attended with a preternatural increase in the size of the part which is secreted from it.

If this view of the subject be correct, if such is the dependence of the structure and configuration of the whole body, upon the primitive condition of the arterial system, are we not justified in referring to the same system the numerous class of monsters, in which are found a redundancy or re-duplication of the same parts; that if the primitive carotid be doubled, two heads will be formed, and if the same thing exist in the axillary or femoral, we shall have formed four superior and four inferior extremities.

We have also from this view a ready explanation of the process which takes places in cases where parts are deficient. Bichat has shown that the organs of animal life are generally double; thus the brain is composed of two hemispheres, the senses are double, the nerves go out of the brain in pairs, and are distributed to similar parts on the right and left of the body; thus as he expresses it, there is "a right and left life in the body," and that they are distinct, we have evidence sufficient in hemiplegia, where one-half of the body is alone affected. Mr. Serres has applied this fact to explain the formation of monsters having hare-lip, fissures in the palate, deficiency of parietes of the abdomen, &c. He considers that the process of secretion goes on from the circumference towards the centre, that the lateral parts are formed first, and that the junction in the centre takes place subsequently; thus in the head, the bones are formed first on the sides and gradually approach; the same thing is observed in the superior and inferior maxillary bones, which are first formed laterally, and subsequently united in the median line of the body. Now if any thing interrupts the secretion of bone from the arteries, before they meet, there will be a deficiency in the bone, and the same will happen in the soft parts; a satisfactory explanation of the manner in which simple and compound hare-lip are formed.

The ovum at the moment of conception, and before its passage into the uterus, is found to consist of a mucous matter, semi-transparent, and possessing no traces of distinct organization; this homogeneous appearance is no argument against its possessing vessels conveying colourless fluids; the vessels in the ovum at this period, may be considered analogous to the primitive condition of the artery in cartilage, which, though at first transparent, subsequently conveys red blood and secretes bone.

Fact, and observation, therefore, both strongly confirm the views which have been taken of this subject thus far, but beyond this we enter on a wide field as yet unknown, but which, from the present spirit of inquiry, may not long be under the dominion of imagination and conjecture; thus a question naturally arises, how are the vessels formed? From whence are they derived? These are questions which at present cannot be answered. To sum up our views on this subject, it may be said, that all primitive derangements of organization arise from a suspension of the formative power of the arteries, or from an excess of this power.

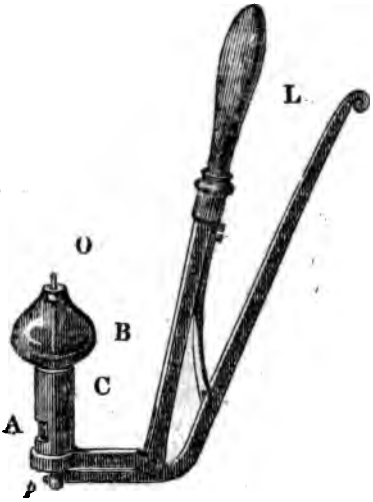
The cause which may be supposed to produce this interruption in the action of the arteries, is involved in total obscurity. Mr. St. Hilaire ascribes it to adhesions formed between the fœtus and surrounding membranes, forming what he terms placental bands; at present this is the only explanation offered; it requires more elucidation, and moreover is not applicable to cases where redundancy of parts takes place.

New York, January, 1827.

Art. IV. *Improved Eudiometrical Apparatus.* By R. Hare, M. D. Professor of Chemistry in the University of Pennsylvania.

I. *Piston Valve Volumeter.*

I HAVE contrived some instruments for taking volumes of gas at one time, precisely equal to those taken at another time. I call them volumeters, to avoid circumlocution. They are of two kinds, one calculated to be introduced into a bell glass, over water, or mercury; the other may be filled through an orifice, as is usual in the case of filling a common bottle over the pneumatic cistern. The following figure will convey a due conception of one of them, which having a piston, I call the piston valve volumeter.



The lever, L, is attached, by a hinge, to a piston, *p*, which works inside of a chamber, C. The rod of this piston, extends beyond the packing through the axis of the bulb, B, to the orifice, O, in its apex, where it sustains a valve, by which this orifice is kept close, so long as the pressure of the spring, acting on the lever, at L, is not counteracted by the hand of the operator.

Suppose that, while the bulb of this instrument, filled with water or mercury, is within a bell glass, containing a gas, the lever be pressed towards the handle, the valve is drawn back so as to open the orifice of the apex of the bulb, and at the same time the piston descends below an aperture, A, in the chamber. The liquid in the bulb will now of course run out, and be replaced by gas, which is securely included, as soon as the pressure of the spring is allowed to push the piston beyond the lateral aperture in the chamber, and the valve into the orifice, O, in the apex of the bulb.

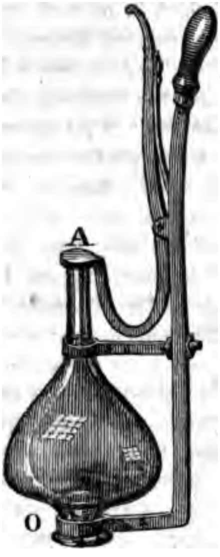
The gas thus included may be transferred to any vessel, inverted over mercury or water, by depressing the orifice of the bulb below that of the vessel, and moving the lever, L, so as to open the aperture, A, in the chamber, and the orifice of the bulb simultaneously.

The bulk of gas, included by the volumeter, will always be the same; but the quantity will be as the density of the gas into which it may be introduced. Hence in order to measure a gas accurately, the liquid, whether water, or mercury, over which it may be confined, should be of the same height within, as without. This is especially important, in the case of mercury, which being nearly fourteen times heavier than water, affects the density of a gas materially, even when its surface within the containing vessel, does not deviate sensibly from the level of its surface without.

To remove this source of inaccuracy, I employ a small gage which communicates through a cock, in the neck of the bell, with the gas within. In this gage any light liquid will answer, which is not absorbent of the gas. In the case of ammonia, liquid ammonia may be used; in the case of muriatic gas, the liquid acid. In article V. p. 33, a bell glass is represented, furnished with a gage of the kind which I have used, and which is described more particularly in Vol. II. N. S. p. 92, as attached to a eudiometer.

The density of the gas will be in equilibrio with that of the air, when the bell is supported at such a height, as to cause the liquid in each tube of the gage to be in the same level.

II. *Simple valve Volumeter.*



Besides the lower orifice, O, by which it is filled with gas, the volumeter which this figure represents, has an orifice at its apex, A, closed by a valve attached to a lever. This lever is subjected to a spring, so as to receive the pressure requisite to keep the upper orifice shut, when no effort is made, to open it.

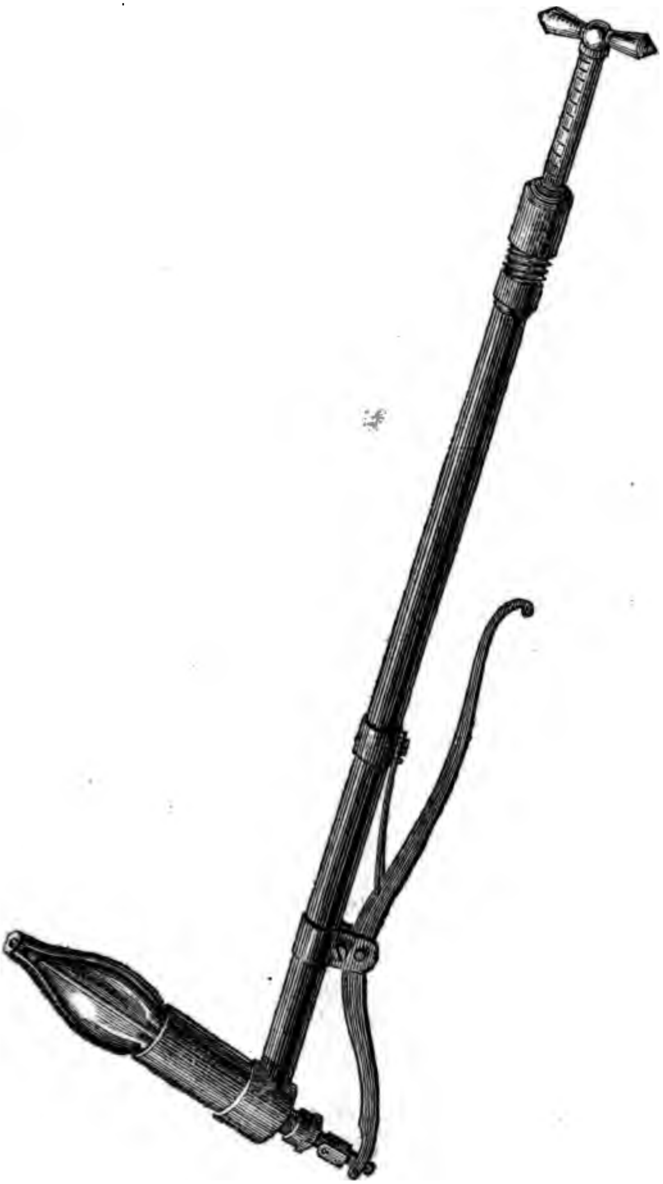
When this volumeter is plunged below the surface of the water of a pneumatic cistern, the air being allowed to escape, and the valve then to shut itself under the water, on lifting the vessel it comes up full of the liquid, and will remain so, if the lower orifice be ever so little below the surface of the water in the cistern. Thus situated, it may be filled with hydrogen, proceeding by a tube, from a self-regulating reservoir. If the apex, A, be then placed under any vessel, inverted duly in the usual way, the gas will pass into it, as soon as the valve is lifted.

Volumes of atmospheric air are taken, by the same instrument, simply by lowering it into the liquid of the cistern, placing the apex under the vessel into which it is to be transferred, and lifting the valve: or preferably by filling it with water, and emptying it in some place, out of doors, where the atmosphere may be supposed sufficiently pure, and afterwards transferring the air thus obtained, as above described, by opening the valve while the apex is within the vessel, in which the mixture is to be made. In this case, while carrying the volumeter forth, and back, the orifice must be closed. This object is best effected by a piece of sheet metal, or pane of glass.

It is necessary that the water, the atmosphere, and the gases should be at the same temperature during this process.

III. *Sliding Rod Gas Measure.*

The construction of this instrument differs from that of my sliding rod eudiometers, in having a valve which is opened and shut by a spring and lever, acting upon a rod passing through a collar of leathers. By means of this valve, any gas, drawn into the receiver, is included so as to be free from the possibility of loss, during its transfer from one vessel to another. This instrument is much larger than the eudiometers for explosion, being intended to make mixtures of gas, in those cases where one is to be to the other, in a proportion which cannot be conveniently obtained by taking more or less volumes of the one, than the other, by means of the volumeters: as for instance, suppose it were an object to analyze the air according to Dr. Thomson's plan of taking 42 per cent. of hydrogen. The only way of mixing the gases by a volumeter, in such a ratio, would be to take the full of the volumeter 21 times of hydrogen, and 50 times of atmospheric air. By the large sliding rod instrument, this object is effected at once by taking 42 measures of the one, and 100 measures of the other.



IV. *Barometer Gage Eudiometer.*

The following is an engraving of the barometer gage eudiometer for explosions. R, is a glass receiver. Within the receiver near W, is an arc of platina, by the ignition of which the gas is inflamed. C, is a cock with three orifices, either of which may be made to communicate with the receiver, according to the position of the lever L. More than one of the orifices cannot be open at once, but all may at the same time be closed. The barometer gage, GG, is seen beside the receiver, with which it communicates through the pipe P, and the valve cock V, by means of which the communication, between the gage and receiver, may be suspended at pleasure. The pipe A, conveys to the receiver, the gaseous mixture from the bell glass B. By one of the pipes D, a communication with the air pump may be established. The other pipe is used when different kinds of gas are to be successively introduced; or when a portion of residual gas is to be drawn out for examination. TT, are rods for conveying the ignition to the platina wire. *m*, is a wooden dish, holding mercury for the gage tube.

It is well known, to those who are familiar with pneumatics, that if a receiver communicate simultaneously with an air pump, and a barometer gage, the extent of the exhaustion will be indicated by the height of the mercury in the gage tube; so that if there be a scale of equal parts associated with the tube, the quantity of air taken from the receiver at any stage of the exhaustion, will be to the quantity held by it when full, as the number opposite the mercurial column, when the observation is made, to that to which it would rise, if the receiver were thoroughly exhausted.

Hence having exhausted the vessel, thoroughly, if the mercury stand at 450 degrees, by the gage, on allowing any gaseous fluid to enter till its sinks to 150°, the quantity in the receiver will be 300 parts; and if of this, by explosion, or any other means, any number of parts be condensed, the mercury in the gage must rise that number of degrees.*

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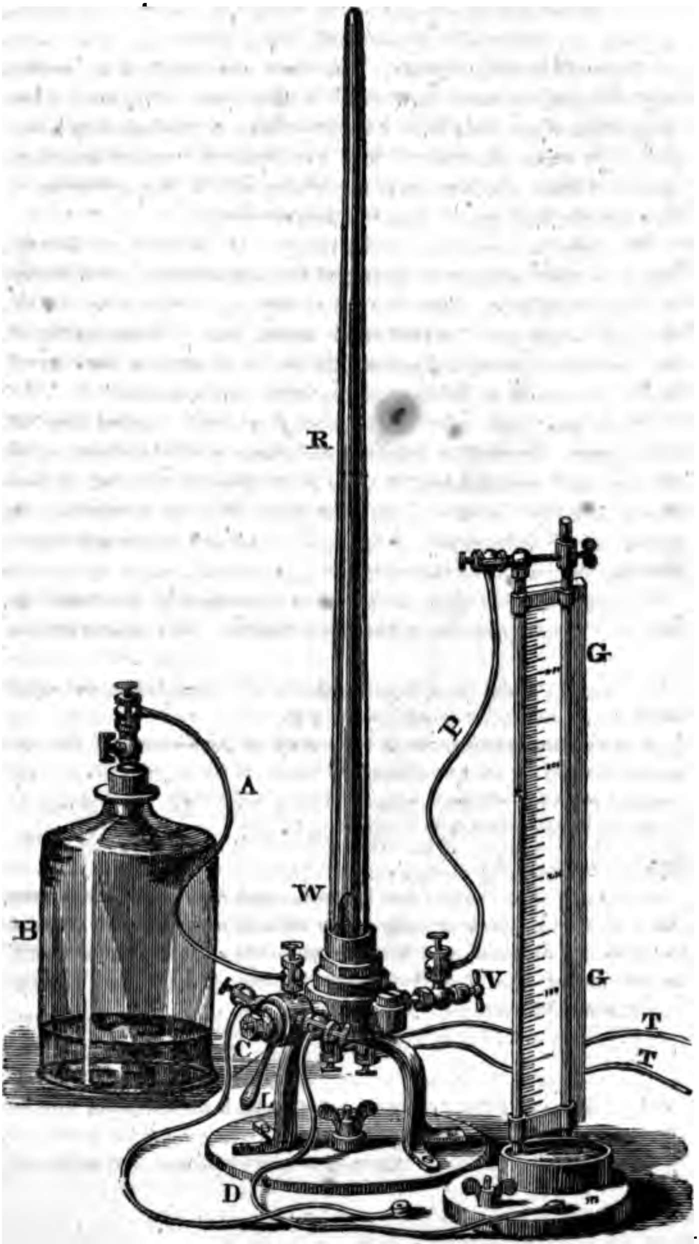
* That portion of the bore of the tube which is not occupied by mercury, adds to the capacity which influences the gage, and the portion of the gage which is emptied of mercury, varies in extent; but as the air,


R
G
p
A
W
B
V
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T
C
L
D
m

The receiver is a stout glass tube, which tapers from two inches, in diameter internally, to one inch; being open at the larger end, at the smaller end, closed. This form was adopted as combining strength, to resist explosions, with a capacity to hold larger quantities of gas than have heretofore been exploded in eudiometers. It must be evident that the larger the quantities of gas operated with, the less upon the whole will be the influence of any minute leakage, or error in measurement.

The tube is cemented, at the larger end, into a brass ferrule, which is screwed into a casting of the same metal; and fastened to a tripod of iron. Into the same casting, a brass plug screws, through which are inserted stout wires, one of them insulated, for producing galvanic ignition, in an arc of platina wire as already described in the case of my other eudiometers.*

With the gage tube, [illegible] associated a scale divided into 450 equal parts. Instead of inhaling successively due portions of hydrogen, and atmospheric air, as heretofore described, I have found it better to mix them previously in known volumes, by means of the volumeters, described in the preceding articles.—Having by the aid of one of those instruments made a mixture of one part of hydrogen, with two of atmospheric air, it follows, that if 300 measures be taken by a sliding rod eudiometer, or

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which remains in the gage, is not subjected to the explosion, the extent of the condensation, is uninfluenced by it.

A slight error may arise from the sinking of the mercury, in the dish, as the quantity in this receptacle, lessens, by its rise in the tube: and, vice versa, when subsidence ensues. This movement will be to the movement of the mercurial column, in the tube, as the square of its diameter, to the square of the diameter of the mercurial stratum in the dish, and the diameters of these being respectively as 20 to 1, it would be 1-400 of the whole height of the scale; this difference may be allowed for, or may be remedied by raising or lowering the dish, by an appropriate screw, or employing a dish of a superficies so large, and a gage tube with a bore so small, as to render the effect of the rise, or subsidence of the mercury in the gage, insignificant.

* One of the greatest difficulties, which I encountered, was in the imperfection of stop-cocks, in the common form. This I obviated by two contrivances of my own; one invented about sixteen years ago, the other in the summer of 1825. Of these I shall publish a description, with engravings, as soon as I can conveniently.

other adequate means, there will be a mixture, in the quantity so taken, of 200 parts of atmospheric air, and 100 of hydrogen. In case equal volumes of these aëriform fluids be mixed into one bell glass, 200 measures would contain 100 of each. This mode of procuring such mixtures, is preferable from its saving trouble, and lessening the chances of error in the measurement; and because the gaseous fluids become more thoroughly blended; a result which does not follow their admixture, as immediately as might be expected.

Having prepared a mixture of two volumes of atmospheric air, with one of hydrogen, and the receiver being exhausted as far as practicable, if any small quantity of the mixture be exploded in it, by exciting ignition in the platina wire, W, all the oxygen will be condensed. The residuum, consisting of hydrogen, and nitrogen, will not interfere with the result of any subsequent experiment, although the receiver should not be thoroughly exhausted. Under these circumstances, let the exhaustion be carried to 400 degrees, and let 300 measures of the mixture enter, so as to depress the mercury in the gage to 100 on the scale. An explosion being effected, the mercury in the gage will rise at first to about 215 degrees, and after the gas shall have regained its previous temperature, will be found somewhat above 220 degrees.

Of course there will be a deficit produced of more than 120 parts, of which one-third, or a little more than 40 parts, will be the quantity of oxygen in 200 parts of the air, subjected to analysis.

In order to ascertain the influence of temperature, a thermometer is placed in the receiver, the state of which is noted before, and after explosion; and the deficit is estimated, either, by allowing for the difference, produced by the temperature, or awaiting the refrigeration, until the mercury, in the thermometer, be at the same height as before the explosion.

From this account of the barometer gage eudiometer, and those previously given of the sliding rod instruments, it must be evident that I have contrived three methods of analysing the atmosphere, or other mixtures containing oxygen, or hydrogen gas.

In the barometer gage instrument, the deficit is known by its effect upon the mercury in the gage tube; in one of the sliding rod instruments, the deficit is compensated by water, and the quantity of this liquid which enters for this purpose, is known by the portion of the sliding rod which remains without, after excluding the residual gas. In the instrument with the sliding rod and gage, the deficit is compensated by introducing the rod, the gage enabling us to know, when it has been introduced sufficiently; while the graduation shows, the ratio of the gaseous matter condensed, to the quantity confined.

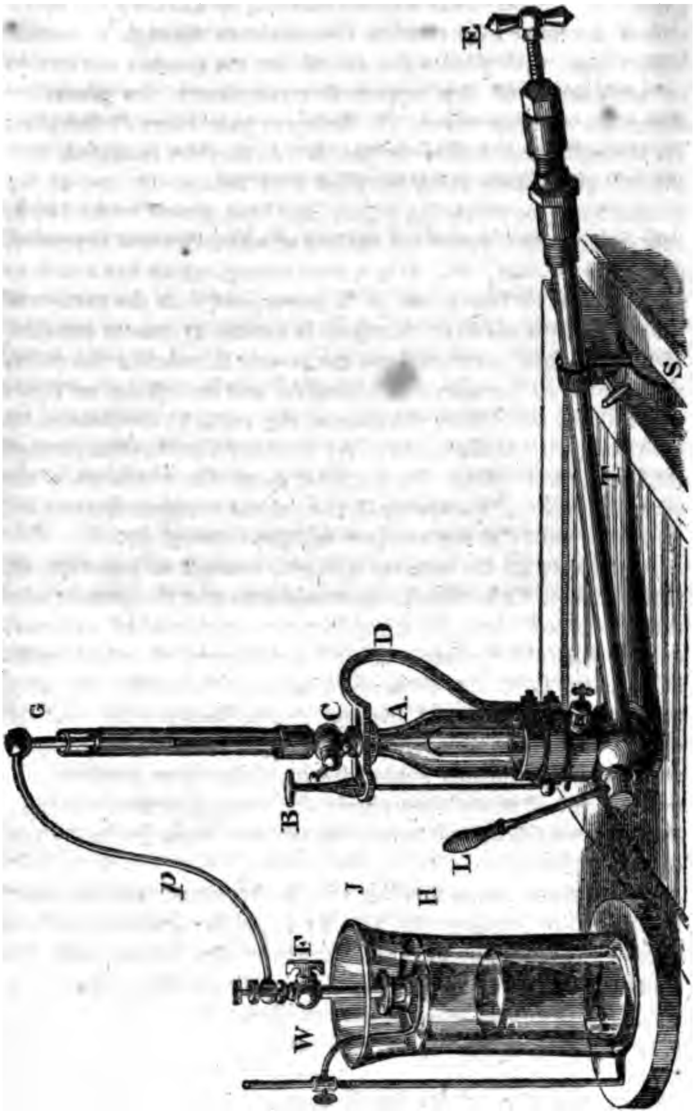
When the diversity of these methods is considered, it is pleasing to observe but little difference in the results, obtained by them.

A great number of experiments performed by means of the barometer gage eudiometer, or those of the sliding rod construction, over water, and over mercury, gave $20\frac{66}{100}$ as the quantity of oxygen in 100 parts of the air. In 20 experiments the greatest discordancy did not amount to $\frac{1}{1000}$ part in 100 measures of air.

In lieu of the glass receiver a strong metallic vessel may be used, as for instance, one of the iron bottles employed to contain mercury. The igniting wire may be placed so as to be visible in a very stout glass tube projecting from the bottle. But a glass tube is not necessary, as, without seeing the ignition, the explosion will be known to take place by the noise which it makes, and the movement of the mercury in the gage.

I have provided a glass spheroid, holding about two gallons, the vertical diameter being the longest. This screws on in place of the tall receiver, represented in the figure. In lieu of the igniting wires, a cup containing phosphorous is supported at the end of a copper tube, which it closes; and which is upheld by a brass screw plug, inserted at the bottom. Phosphorus, in due quantity, being placed in the cup and ignited by means of a hot iron, passed up through the tube, the oxygen of the air included in the spheroid is condensed, and the deficit ascertained by the rise of the mercury in the gage. I have made several experiments with this apparatus, and find the results harmonious with each other, and with those obtained by my other instruments.

V. *Improved Mercurial Sliding Rod Hydro-Oxygen Eudiometer.*



The method of operating with the steel eudiometer and water gage, over mercury, has been facilitated, by allowing the upper end of the inner gage tube to communicate through a flexible leaden pipe, with a bell glass containing the gaseous mixture to be analysed. Of this improved arrangement, the preceding figure is a representation. G, the inner gage tube; *P*, the pipe; H, the bell glass, within the jar, J. It must be imagined, that the bell glass, after being supplied with the gas by one of the volumeters, (see preceding pages,) has been placed in the jar, J, containing water, under the surface of which the bell is pressed down, by the wire, W. D is a steel spring, which has a disk of oiled leather let into it, so as to correspond with the surface of the apex of the receiver, A, which is ground as true as possible. Hence, a slight pressure from the screw, B, renders the joint, made between the apex of the receiver and the spring, air tight; while at the same time, the bore of the cock, C, communicates with the cavity of the receiver, by means of a perforation through the leather and spring. On the other hand, the relaxation of the screw, permitting the spring to rise, opens a communication between the cavity of the receiver and the external air.

In order to fill the receiver with gas, through the gage tube, G, and the pipe, *P*, by which it communicates with the gaseous mixture in the bell glass, H, the eudiometer must be filled with mercury to the total exclusion of air,[*] and the rod, E, wholly within its tube, T. Under these circumstances the spring, D, being pressed upon the apex of the receiver by the screw, B, and the cocks, C and F, both open; on drawing out the rod, the receiver will be proportionably supplied with the gaseous mixture. In order to get rid of the atmospheric air, in the gage tube and pipe, it is necessary to fill and empty the receiver, from the bell glass, at least twice.

The receiver being filled as already described, and the cock, F, closed, on pushing the rod, E, home, the gaseous mixture driving the air before it, through the interstice, between the gage tubes, will in part effect its escape, in part supply, in the tubes, the place of the air which it has expelled.[*] The cock, F, being opened, this process may be repeated.

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[*] See Vol. II. N. S. p. 91.

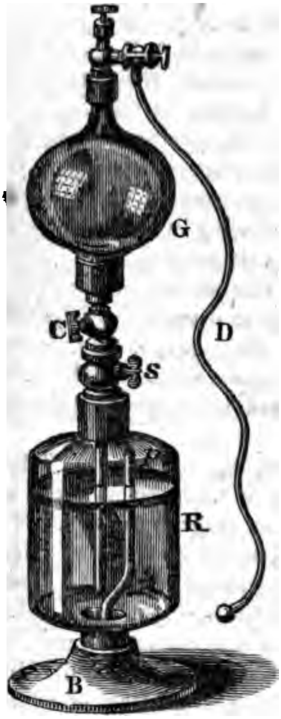
After the apparatus has, by these means, been purged of atmospheric air, the cocks, C and F, being open, suppose the rod drawn out 300 degrees. If the gaseous mixture in the bell, consist of two volumes of air, and one of hydrogen, of the 300 measures drawn in by the rod, 100 measures will be hydrogen, and 200 measures will be air. Under these circumstances, the cock, F, must be closed. In consequence of the hydrostatic pressure to which the gas will have been subjected in the bell, its density within the receiver will be greater than without. Hence the pressure of the screw, B, on the spring, L, must be relaxed, until the gage indicates that the gas within the receiver has, by the escape of a portion of it, become, with respect to pressure, in equilibrio with the atmosphere. The pressure on the spring is then restored, the cock, B, communicating with the gage is closed, and an explosion is effected by the igniting wire. After the explosion, the rod is to be so far returned into its tube, as to compensate the condensation as nearly as it can be anticipated. By restoring the communication with the gage and duly removing the rod, the compensation may be rendered exact. The number of degrees which the rod has entered, must represent the deficit caused by the combustion.

By loosening the spring, and forcing the rod into the tube, the residual gas will be expelled, and if there be no error, in effecting the expulsion, the rod will just enter to the hilt.

It is a great advantage attending this construction of the mercurial eudiometer, that it may be used without a mercurial pneumatic cistern, by inserting the lower orifice into a flat dish, about four inches in diameter, containing a stratum of mercury, of about an inch in depth. I have another construction, which differs from this only in the omission of the large cock, of which the key is turned by the lever L. Mercury is supplied, or any of it removed, by means of a small receptacle, on one side, with which a communication exists, through a tube closed or opened, at pleasure, by a screw.

VI. *Carbonicometer.*

The apparatus here represented is one which I have contrived, for withdrawing a known portion of residual air, from the barometer gage eudiometer, in order to wash it with lime-water.



P is a pipe which causes a communication between the upper part of the receiver, R, and the cavity under the hollow pedestal, B. The lower orifice of this pipe, where it enters the cavity of the pedestal, is covered by a valve opening downwards. The receiver is surmounted by a brass cap, into which, as well as the socket in the pedestal, it is cemented air tight. The cap of the receiver terminates in a brass ball, furnished with a screw, S. The cock, C, is joined to the ball by a screw, and carries a ferrule, into which the neck of the globe G is cemented. In the axis of the receiver, and descending nearly to the bottom, may be seen a tube, which is soldered into a perforation communicating with the bore of the cock, C, so as to establish a communication between the inside of the receiver, and that of the globe.

The globe is surmounted by a valve cock, furnished with a gallows and screw, so that a leaden pipe, D, terminated by a brass nob, duly perforated, may be joined to it, air tight, without difficulty. Hence if the pipe be annexed, at the other end, to the cock of the barometer gage eudiometer, a communication between the inside of the receiver of this instrument, and the globe, G, may be easily opened or suspended at pleasure.

Suppose the receiver, R, to be occupied by lime water, as represented in the figure. Place the pedestal, B, over the hole in the air pump plate, which the rim of the pedestal is ground to fit. On working the pump, the air of the receiver, above the lime water, is drawn out through the valve at the bottom of the pipe, *P*. Of course the air in the globe, follows it, through the pipe, which leads from it into the receiver. Having exhausted the globe and receiver, if the screw, S, be so loosened as to allow the atmosphere to enter the receiver, and press upon the surface of the lime water, while the globe remains exhausted, the lime water will of course rise into, and fill the globe. Should the receiver, under these circumstances, be again exhausted, while by means of the flexible pipe, D, a communication with the barometer gage eudiometer is effected, the pressure of the gas in the eudiometer being greater than that of the rare medium of the exhausted receiver, R, it follows that this gas will press into the globe, and cause a portion of the lime water to descend into the receiver. In this way, suppose 100 measures, by the barometer gage, taken from the eudiometer. The valve cock, may then be closed, the screw, S, in the neck of the receiver, relaxed so as to admit the atmosphere. The lime water will rise into the globe, until the pressure of the gas therein be nearly equal to that of the atmosphere. By agitating the globe, the carbonic acid will combine with the lime in the water. When this object is effected, the residual gas may be allowed to re-enter the eudiometer, where the quantity of it may be measured, and consequently the extent of the absorption known. It is not necessary that the apparatus should remain upon the air pump plate during the whole process. By means of the valve, which covers the perforation in the pedestal, in which the pipe, *P*, is inserted, the exhaustion may be sustained, during the removal of the receiver from the air pump, to any part of the laboratory, where it may be convenient to connect it with the eudiometer.

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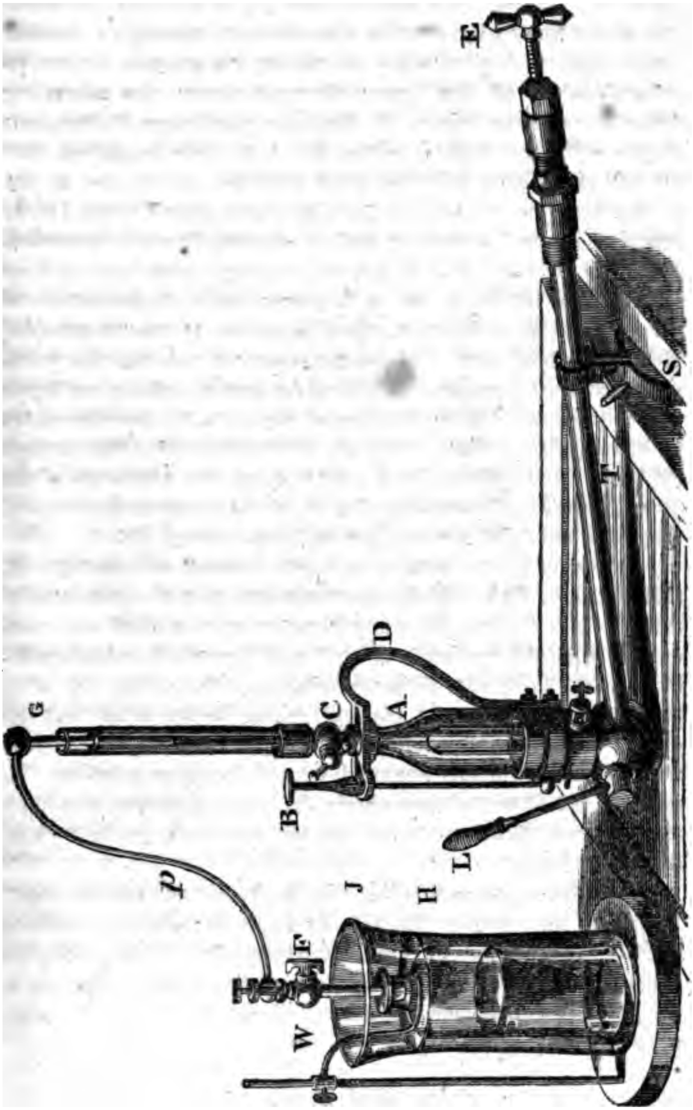

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Hippocrates, who attempts to explain it by saying, that at seven months the child makes an effort to deliver itself; should it succeed, it will in general survive; but if it fail, it renews the attempt at the eighth month; and hence, if it be able to extricate itself, comes into the world so weak and infirm from these repeated trials, that it is not capable of sustaining life.

The true explanation of the fact, however, appears to be that given by Dr. DEWEES.[*] That there is a greater power and disposition in the body and fundus of the uterus to contract and throw off its contents at the seventh than at the eighth month, and that at this period the neck of the uterus is more prepared to relax or yield to these contractions. This agrees in a great measure with the observation of Foderè,[†] "that delivery is more generally natural at seven than at eight months, as abortions often occur at this time without any apparent cause, whilst those which happen at the eighth month are the effect of some external or moral shock—hence the fœtus receives a mortal injury." Foderè, notwithstanding this explanation, holds the opinion now generally adopted by medical jurists, that a fœtus at eight months being more matured than at seven, is infinitely more capable of assuming and sustaining an independent existence. Of the truth of this doctrine, there is not the shadow of doubt; yet it cannot be denied that from the greater number of children who survive their birth, at seven than at eight months, it would appear that there was a greater viability at the first period—but this occurs, as has been stated above, not from the greater capacity of the child to assume the free state, at that time, but from certain peculiarities in the action of the uterus; it may be assumed as a rule that children born at the eighth month are, (cæteris paribus,) more viable and likely to survive birth than at the seventh; but, from the nature and physiology of the uterus, there will always be more seven months children reared than of the eighth.

At nine months the organization of the fœtus is as perfect as it can become in the womb of the mother; until that period it has enjoyed a mere vegetative existence, being a mere parasite of the mother, and its life wholly dependent on its circulation; but after this time it becomes capable of assuming a new and independent existence, not dependent as formerly on the circulation alone, but on a variety of actions which then become developed, as respiration, digestion, &c.

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[*] Essays, &c. by W. P. Dewees, p. 72. [†] Foderè, o. c. vol. ii. 169.

Hence, the best and surest mode of judging of the viability of an infant, is an examination of its organization; if this is immature or deficient even at the close of the ninth month, it could not have survived its birth; or if it did so, but in an incomplete manner, and for a short period.

From what has been said, an infant may always be pronounced *viable*, when it has been heard to cry during or immediately after birth, thus indicating that its respiration has commenced; when it moves its limbs with facility; when the body is of a clear red colour; the mouth, nostrils, eyelids and ears perfectly open; the bones of the head having some solidity, and the fontanelles not too large, and the urine and meconium being freely discharged a short time after birth.

On the contrary, it may be pronounced immature, when its length and bulk are much less than natural, when it does not move its members, when it is unable to cry, cannot take the nipple, is of dark red colour, traversed by bluish vessels, the bones of the head soft, the fontanelles large, the mouth and nostrils closed, and the membrana pupillaris present, &c.

The above directions or signs for ascertaining the viability of an infant, taken from Foderè and Capuron,* refer only to those cases where the child has been seen alive; where it has died before an examination could be made, we must of course rely upon other signs, both external and internal; most of these have already been alluded to, when treating of the age of the child; but there are many others which will come under consideration in the subsequent part of this discussion.

But, to return to the great point under consideration, the determination of whether a child which is supposed to have been murdered, has respired before its destruction, or whether it was still-born. In all such cases where it is decided that the child was *viable* at the time of its birth, our great dependance for their elucidation must depend on the appearance of the organs of circulation and respiration, and the changes which have taken place in them. This, at first view, would appear to be attended with but little difficulty; yet, a closer investigation will detect so many circumstances tending to militate against its certainty, that, as we have before observed, some writers, and those of no slight weight and experience, have doubted whether those proofs, derivable from the appearance of the pulmonary organs, can be relied on as decisive and trust-worthy.

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* Foderè, vol. ii. p. 153. Capuron, p. 180–1.

Before entering on the consideration of the changes which take place, we will rapidly sketch the peculiarities of the fœtal circulation, as it exists before respiration has commenced. The fœtus in utero derives its supply of blood from the system of the mother, by means of the placenta, which appears in some manner, which has never been satisfactorily demonstrated, to perform the office of lungs, by changing the venous blood of the fœtus into arterial. From the placenta, a vein called the umbilical, larger in diameter than the accompanying arteries, conveys the blood to the child, passing into the cavity of the abdomen at the navel, from whence it proceeds exterior to the peritoneum, but in a duplicature of it, termed the *falciform ligament*, to the liver, which it enters at the great fissure, and opens into the left branch of the vena portæ; but a portion of the blood is conveyed direct to the inferior vena cava by a vessel peculiar to the fœtus, called the *ductus venosus.* This venous duct carries a small portion only of the blood, being much smaller than the umbilical vein; the greater part passes through the liver by the vena portarum, before it can enter the cava. The blood having reached the right auricle, would pass through the lungs by the pulmonary artery and its ramifications, were it not that previous to the distention of these organs by respiration, they can receive no greater quantity of blood than is merely necessary for their nutriment. Nature has, therefore, provided relief in a twofold manner; 1st, In the septum which divides the two auricles is a foramen somewhat of an oval form, termed the *foramen ovale;* this structure permits some of the blood which flows into the right auricle, to pass into the left, without taking the route of the right ventricle, but the larger portion is forced into the pulmonary artery, where it, 2dly, flows into the aorta direct by a communicating vessel, the *ductus arteriosus.*

In the young subject, in whom respiration has never taken place, it appears as if the pulmonary artery was continued into the aorta, and merely sent off two small branches, to supply the lungs. Partly therefore by the pulmonary veins, and partly by the foramen ovale, portions of the blood are transmitted to the left auricle, and thence, through the ventricle into the aorta, whilst the larger part finds its way to this vessel by the pulmonary artery and ductus arteriosus direct.

After having been distributed to every part of the body, it is conveyed back by the umbilical arteries, which are continuations of the internal iliacs and running on each side of the bladder to its fundus, proceed from it with the ligament to the umbilicus, where they pass out of the abdomen to the placenta, forming with the umbilical vein, cellular tissue and integuments, the umbilical chord.

Such then is the economy of the circulation in a child before birth, or rather before the process of respiration has commenced—it must therefore be evident that the lungs and heart must differ exceedingly in their appearance and structure after this process has been established, and the circulation has taken the route it is thenceforward to pursue; for the moment the child assumes an independent existence, and the lungs become dilated by the entrance of atmospheric air, the whole of the blood begins to pass through them, there to become oxygenized.

The appearance of the organs themselves in a child which has not yet breathed, must also be taken into the account. In the fœtus we find the viscera of the abdomen more developed than those of the thorax: the bladder generally contains urine, and the intestinal canal, meconium; the diaphragm is forced up into the thorax, being much more convex than after respiration has taken place: the lungs are dense, of a dark red or chocolate colour, resembling liver, are in a state of collapse, not filling the cavities of the thorax, but applied to the superior part of the dorsal vertebræ, thus leaving visible the heart, pericardium and diaphragm: the pulmonary vessels are small, and contain so little blood that little or no hæmorrhage ensues on cutting into the lungs.

In the heart the foramen ovale will be found open, and the ductus arteriosus will be pervious: the thorax itself is flattened and compressed.

But the moment respiration has been established, a great and astonishing change takes place in the economy and appearance of these parts.

Change in the Vascular System.—In the heart will be seen evident marks of the altered course of the circulation, the foramen ovale may not however be closed, but there will be some approach to it, upon this peculiarity no great stress should be laid, as it requires some time to effect the change. This however has been proposed as a test and was much relied on by some. There is also a change in the situation of this opening. The first observer of it appears to have been Ridlèy, in 1750, his observations, which are confirmed by various later writers, prove that a considerable alteration of position in this opening commences immediately after birth, gradually turning towards the right, and at length after revolving as it were round the right edge of the septum, it will be found at the upper instead of the lower part of it. This test, although exceedingly interesting as a physiological phenomenon, is far too nice to be depended on for practical results.

The ductus arteriosus will be found empty and collapsed, as the blood which formerly found its passage through it, is forced through the lungs. Professor Bernt, in a late work, lays great stress on the importance of this test, considering it as constituting in most, if not in all cases a criterion of the child having breathed; we will give his own words.

> "In the fœtus," says he, "the arterial duct proceeds from that part of the trunk of the pulmonary artery, where it divides into its two great branches, and running parallel with the arch of the aorta, and in contact with it, joins it at a very acute angle. If the child has breathed even for a few moments only, the aperture by which the duct enters the aorta, becomes oval, and afterwards the diameter gradually but rapidly contracts at the aortal end, so that the vessel forms a cone with its base towards the pulmonary artery. If the child has breathed several hours or days, it resumes its cylindrical form, but becomes much contracted and shorter in its dimensions, so that from being equal in diameter to the pulmonary trunk, it becomes intermediate betwixt that and the pulmonary branches, or even not larger than the latter. If the child has lived about a week, it is wrinkled and no thicker than a crow quill, while the pulmonary branches are at least as large, and the pulmonary trunk is as thick as a goose quill."*

Could the above be depended on in all cases, it would prove a most valuable addition to this department of medical jurisprudence. Not having seen the original work, we cannot refer to the cases he adduces in support of his theory. The reviewer of his work in the foreign journal, quoted above, however states, that from Bernt's own cases, it appears that the test, though generally, is not always correct, the change being sometimes far slower than he represents, but that in every case where respiration had occurred before the death of the child, however short the time it had existed, that either the aortal end of the duct was found contracted, or it was diminished in size along its whole course, but the duct may be intermediate in size betwixt the pulmonary trunk and branches, although the child has never respired. Of twenty-six cases examined, in fourteen the duct was equal in size to the pulmonary trunk and larger than the branches, but in six it was intermediate to the two, in four it was less than the trunk, and equal to the branches, and in two it was contracted at its aortal end. Hence there are some contravening difficulties to exclusive reliance being placed on this test, but it may be allowed that if the duct is either contracted towards the aorta, or much less than the pulmonary trunk, the presumption is that the child breathed either during or after birth.

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* Edinburgh Med. and Surg. Journal, vol. 26, p. 377.

The ductus venosus and umbilical arteries also become collapsed after birth, the former gradually assuming the state of a ligament; the changes in these vessels are however too slow to be relied on with certainty.

Changes in the thorax and diaphragm.—After the child has breathed, the thorax loses its flattened and compressed appearance and becomes rounded or arched, and in fact, enlarged in all directions, and the diaphragm less convex towards the abdomen, the tendinous centre of it being now depressed.

These appearances are not to be depended on implicitly, and as is the case with most of the other signs of respiration having commenced, are not of themselves sufficient criteria from which to draw a conclusive opinion.

On the first of these signs, the dilation of the thorax, much reliance was, however, placed by OLBERG; who was of opinion that it was a certain sign of an infant's having breathed.* But besides the difficulty of appreciating the degree of dilatation which has taken place, we cannot be certain, without a greater number of experiments than have already been made, whether the thorax, composed as it is, at that period, of elastic cartilages, will not return to its former compressed shape, in cases where the child dies a short period after birth—added to which, the form of the thorax differs so much in different individuals, that it would not be possible to establish a scale, by which this flattening or dilation could be estimated.

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* De docimasia pulmonum hydrostatica, § 5.

Daniel proposed, in order to obviate the difficulty, to measure the circumference of the thorax with a cord, to compare this measurement with the height of the dorsal vertebræ, and to examine the distance between the sternum and spinal column, but from the reason stated above, no correct deduction could be obtained from this mode of procedure, which is complicated and subject to error. The same may be said with regard to the alteration which takes place in the shape of the diaphragm; that a change does occur is certain, but it is subject to so many variations, that it would be dangerous to rely on it with any certainty as a proof of respiration having been established.

Ploucquet, who dwells at some length on this test, gives the following directions as to the mode to be pursued in the investigation.

> "Ope perpendiculi sterno impositi notetur, cui puncto, et cui costæ summum centri tendinei respondeat, ita demum, postquam per pluræ extra dubiorum aleam posita experimenta constiterit, quodnam id punctum sit in iis, qui numquam respiraverunt et quodnam id sit ad quod respiratio diaphragma deprimere soleat, in singulis caribus hand parum lucis quæstioni affundetur, an infans respiraverit nec ne. Porro tentari posset, and diaphragma ulterius sursum pelli queat mec ne."*

Changes in other organs.—The liver, it is well known, is much larger in proportion in the fœtus than after birth; whilst the fœtal circulation continues unimpaired, the greater part of the blood passes through this viscus, whilst little or none circulates through the lungs, but when the pulmonary circulation is established, and respiration vigorous, they become charged with blood, and their weight is much increased; the circulation having now taken another route, only a proportion of the blood passes through the liver, which hence becomes diminished in size and weight.

On these grounds Dr. Beck has proposed a test which appears to be original with him, namely, the difference between the weight of the liver with that of the whole body before and after respiration has commenced. This test, as the author himself remarks, is subject to the same objections as Ploucquet's, as regards the lungs, but we cannot agree with him, that it would serve in all cases to prove the accuracy of this latter test; where they both concur in supporting the same opinion, the corroborative evidence derived from the liver, would certainly add to the conclusiveness of the testimony, but in a case where the lungs show that the child had respired, and on examination, the liver was still in its fœtal state, although the circumstance should make the observer more cautious in his deductions, still it would not, in our opinion, be of sufficient importance to outweigh other proofs to the contrary.*

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* Manuel d'autopsie cadaverique, p. 106, note.

On the discharge of meconium from the intestines, and of urine from the bladder, much reliance ought not to be placed, both are subject to so many exceptions and variations, that it would be dangerous to depend on them in making up our judgment on a case. But at the same time, it should be sedulously borne in mind that no one test or proof should be overlooked, for the concurrence of the whole, although individually unsatisfactory and defective, may afford a clear and decided mass of evidence, impossible to be controverted.

Changes produced in the lungs.—These organs will now be found expanded and completely filling the cavities of the thorax, particularly the right lobe, which, in the generality of cases, appears to be the first distended; they will now be of a florid red colour and of a light and spongy consistence, so that if placed in a vessel of water they are so buoyant as to float on the surface: on cutting into them there will be heard a peculiar crepitating noise produced by the air escaping from their cells.

Such, in general terms, are the physiological grounds for concluding that a child has been born alive or not, but the proofs derivable from the lungs have been so strongly insisted on as decisive by some authors, and so depreciated by others, that we cannot pass them over without giving them a more minute examination.

On the change in colour of the lungs.—Although in the generality of cases, the lungs of the fœtus are brownish or brownish-red before respiration has taken place, and after this process has occurred, alter to a florid red or scarlet, we cannot depend upon this change as affording an infallible proof.

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* Elements of Medical Jurisprudence, vol. 1, p. 256.

From the observations of CHAUSSIER, MARC and SCHMITT, it appears, that the colour of the lungs is one of the most fallacious of all the tests which have been proposed to solve this question. There is no organ so susceptible of assuming various shades of colour as the lungs, not only in different individuals, but also in the same infants at different times, depending on their approach to, or recession from maturity; it may also be influenced by contact with the air, thus the colour may be a dark red on opening the thorax, and after a short exposure, change to a florid or clear colour—where infants have died from an engorgement of the lungs with blood, these organs present as dark a shade as if respiration had never been established.

The experiments of the above mentioned observers also show, that artificial respiration when it produces any change, causes a pale or greyish colour, and that the only tint which can be said clearly to indicate natural respiration, is that of a bright or scarlet red, but even this has been observed in children which have been still-born.

Bernt, however, places some reliance on this test, and thinks that the evidence is strong, if whilst the lungs are here and there of a scarlet colour, some portions still preserve their dark tint, and only change to a pale or greyish red, when air is artificially forced into them. But from all the evidence on the subject, it appears manifest that any deductions to be drawn from the colour of the lungs, can serve but as collateral proof, and should only be depended on as substantiating indications derived from other sources.

On the volume or relative size of the lungs.—In infants who have breathed for some time, the lungs, as above stated, will completely fill the cavities of the thorax. On this ground, DANIEL, in 1780, proposed the relative volume of the lungs as a test of whether respiration had taken place or not. In order to determine this, he directs the lungs and heart to be taken out very carefully, and the vessels tied to prevent the introduction of any water into them. They are then to be weighed accurately in the air, after which they are to be plunged in a vessel of water and the difference of weight noted; this is to be repeated, on each lobe separately, and afterwards the weight of the heart deducted from the total result: in order to make the lungs sink, Daniel proposes to augment their weight by enclosing them in a wire basket, the weight of which is previously known; to the side of the vessel containing the water is to be affixed a graduated scale, in order to ascertain the rise of the water on the lungs being plunged into it; this test is founded on the simplest rule of hydrostatics, namely, that a body will displace its own bulk of fluid, hence as the lungs are more voluminous after, than before respiration, they necessarily displace a greater bulk of water, which would be noted by means of the scale; and by weighing the lungs successively in air and water, the loss of weight, in the latter case, would be ascertained, which would be greater or less according to the respective size of these organs; of course, in order to draw any conclusions from the volume of the lungs, according to the above plan, a table or scale of comparison must be established, on which the result is to be founded whether the infant had breathed or not; but this would be subject to so many variations and anomalies, that it would be hazardous to rely on it, or even draw presumptive evidence from it. Even the other test derived from the volume of the lungs, is by no means certain or uniform, namely, observing how far they cover the heart and pericardium.

Bernt however, in his late work, thinks that we may be enabled to draw correct inferences from this circumstance. According to this author, if the fœtal lungs are not diseased or artificially inflated, they never cover the pericardium entirely, but they may hide them in part, but on the contrary if the child has breathed for a short time, they generally cover this part entirely; hence the deduction he makes is, that if the lungs reach neither the pericardium nor diaphragm, the child has never respired, but if they cover these parts entirely, respiration must have taken place. Now according to the experiments of Schmitt, corroborated by those of many other anatomists, this is by no means the case in all instances; in four infants examined by him, which had never breathed, the lungs filled the whole cavity of the thorax, and in another on the contrary, where respiration had been established for thirty-six hours, the lungs, although inflated, were so small as to permit the pericardium to be completely visible; added to which, it has been clearly shown that where respiration has not been fully developed, before the death of the child, that the right lung is always more inflated than the left, this is confirmed by the testimony of Metzger and Portal. Hence although we may draw collateral evidence from the volume of the lungs and the space they occupy, it cannot be assumed as an infalliable or unvarying criterion. Bernt gives a subsidiary test depending on the change which takes place in the lower margin of the left, upper, and right middle lobes. These margins, says he, are sharp and well defined in the fœtus, and never become rounded except from a natural or artificial inflation of the lungs; this test, if correct and substantiated by further experience, may prove highly useful in adding to the chain of evidence.

Relative weight of the lungs.—On the difference which is found to exist between the weight of the lungs before and after natural respiration, Ploucquet of Tubingen proposed in 1782, to establish what he termed the static test. The principle on which this test is founded, is the increase of weight which the lungs of a child must necessarily acquire from the passage of the blood through them immediately on respiration taking place—at the first view, this test would appear to promise undeniable and decisive results, but experience has not justified these expectations. The mode indicated by Ploucquet, was, first to weigh the body of the child, afterwards the lungs were taken out and their weight accurately ascertained, and thus the relation of these organs to the weight of the whole body would be clearly shown. From his experiments it appears that respiration had the effect of doubling the absolute weight of the lungs, and that the relation between these organs and the body of the child before respiration had commenced was as *one* to *seventy*, and on the contrary as *two* to *seventy*, where this process had not taken place. But as is observed by Dr. Beck, these opinions were deduced by their author from a very limited number of experiments, which have not been confirmed by the researches of more recent inquirers, the most extensive of which were those of Chaussier at Paris, and Schmitt of Vienna.

The first, however, to attack this test, was Jæger, who has shown that there is not a constant relation between the lungs and the bodies to which they belonged. He proved also, that the difference of sex has an influence in varying the results.

Hartmann, in Denmark, who also investigated the subject, makes the proportion very different from that laid down by

Ploucquet; namely, one to fifty-nine, where the child has not breathed, and one to forty-eight where it has respired.

Chaussier, who examined the lungs of four hundred children that died at the Hospice de la Maternité at Paris, concluded that it was impossible to establish a fixed scale of relation, as the lungs not only differed at different epochs of the mother's pregnancy, but that they were influenced by the constitution, &c. of the individual, and that even admitting that there was a fixed proportion, it is very different from that of Ploucquet.*

The experiments instituted by Schmitt, on one hundred infants, are corroborative of these opinions, and demonstrate that in many still-born children, the ratio is lower than for those who have breathed and vice versa.

Dr. Beck gives the result of five cases, two of which, certainly support the correctness of Ploucquet's test, but they are too few to ground any opinion on as to its general validity, they only show that in some cases his results may be correct.†

It has also been proposed to ascertain the relation existing betwixt the weight of the lungs and the length of the body. But this, as might be expected, has proved more fallacious than the other. Bernt, who made some experiments on this subject, observes that the average ratio of the length of the body in inches, to the weight of the lungs in grains in still-born children is 1 to 37.1—that of nine who lived a few minutes, 1 to 43.7—of nine who survived several hours or days, one to fifty-one. But he also found that in three of twenty-two still-born children, the ratio is beyond the second, and in one beyond the third, whilst on the contrary in four who survived birth the ratio falls below that of the still-born.‡

The static test, therefore, is too uncertain and variable to furnish more than presumptive proof of respiration having been established. We have passed over other objections to this test founded on the fallacies which may arise from an excessive congestion of blood in the lungs of a still-born child, thus rendering them as heavy as those of a child which had respired; or those founded on the changes produced by the putrefactive process, both of which have great weight; but we trust we have shown that even without touching on these points, that the testimony derived from the static test although it should always be resorted to as an auxiliary, should not be depended on to the exclusion of other and more positive proofs; it may certainly be useful in the cases pointed out by Capuron* to verify whether lungs, which, from the effect of disease, sink when placed in the water, although the infant may have breathed, cannot be proved to have been inflated from the relation of their weight to that of the whole body. But in all cases this mode should be verified by that of Daniel, alluded to above.

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* Observations sur l'Infanticide, par A. Lecieux.

† Elements of Medical Jurisprudence, 1. 254.

‡ Edinburgh Medical and Surgical Journal.

The last tests we shall speak of are those drawn from the specific gravity of the lungs, or what are termed the *hydrostatic tests.*

This method of attempting to determine whether an infant has respired previous to its birth, is mentioned by GALEN, but appears to have been overlooked until the middle of the seventeenth century, when it was again brought into notice by BARTHOLINUS and SWAMMERDAM. ZACCHIAS, whose name stands so deservedly high in the annals of medical jurisprudence, appears either not to have known it, or to have considered it as of little importance, as he passes it over in silence. Since it was brought into notice by the authors alluded to, it has been a subject of dispute and controversy, at one time depended on, as affording a sure and certain criterion of respiration having been established, and at another, rejected as worse than useless.

This test is grounded on the fact that the lungs of a child which has breathed, will float on being placed in water, whilst those which have never been inflated by the respiratory process will sink. Hence it is asserted that if they float, the child must have been born alive, and if they sink, that it has never breathed, and therefore was still-born.

That this is true as a general axiom cannot be denied, but it is unfortunately subject to many objections and fallacies, which we will examine in detail.

1st Objection.—*That an infant may respire before delivery and yet be still-born.*—Where this takes place, there will of course be a dilatation and buoyancy of the lungs. As to *uterine* respiration, although it is admitted by almost all the German writers, and apparently, well substantiated in some cases, we must confess that we are sceptical; as to the case given by DERHAM, in the 26th vol. of the Transactions of the Royal Society, on the authority of Sir HANS SLOANE, of a child which cried for nearly five weeks before its birth, it is demanding too much, even of the most credulous, to believe it. MAHON justly observes on this point, that "few writers venture to say with BOHN, that they themselves have heard it, three-fourths quoting hearsay." In the last number of this Journal, a case is detailed from a German periodical, but without any authority being given. The only circumstances under which a fœtus could respire whilst wholly in the uterus, are those given by Dr. HUTCHINSON, where its mouth presents at the dilated orifice of that organ, and the vagina admits a free passage of air to it, in this opinion, he is supported by OSIANDER, and others, but it is rejected by MARC, as wholly chimerical, whilst MAHON and SMITH observe, that even if such an occurrence could take place, the presentation would render a labour so difficult, that professional assistance would be absolutely necessary. In fact, we may assume that uterine respiration can never come under notice in trials for infanticide, as if it should occur, it is under circumstances which render manual aid necessary to complete the delivery.

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* Medicine Legale, 395.

Vaginal respiration, however may present greater difficulties, in this case we cannot doubt the validity of the evidence. Bernt quotes many authorities on the subject, among which, the most prominent are SCHMITT and OSIANDER, both these observers as well as Bernt himself, relate instances of children being delivered, but lifeless, whose lungs floated on being placed in water. Dr. Smith also details an analogous case, but as in uterine respiration it appears to occur only under certain circumstances, and cannot become a point in trials for child murder.

As regards the crying of the child, after its head is protruded beyond the *os externum*, and whilst the body is still engaged in the passages, the fact cannot be denied, this was one of the great objections urged by Dr. HUNTER against the certainty of the test, and has received the sanction of BOHN, HALLER, MORGAGNI, PLOUCQUET, BAUDELOCQUE, ROSE, OSIANDER, SCHMITT, BERNT, CAPURON, BECK, &c. whilst it is absolutely denied by CAMPER, ROEDIEU, MECKEL, DANIEL and METZGER, but from the mass of evidence adduced in its favour, it cannot be denied that a child may respire whilst only the head is born. But even in conceding this, it is extremely improbable that the infant would die before the rest of its body was delivered, as the largest part having passed, there is little probability of the remainder being detained for any great length of time, as the very circumstance of its breathing shows that the constriction on the thorax cannot be very great. Dr. Hosack, however, details a case where the size of the shoulders prevented delivery from taking place until too late to save the child, which had cried after the extrication of its head from the vulva. But taking into consideration all that may be urged in favour of this objection, it is evident, that although a child may breathe before its body is wholly delivered, this very circumstance gives the best reason to believe that it will be born alive, and that in cases where it is still-born, the labour must be so tedious as not to be easily concealed, and in general, requiring professional assistance; added to which, it is too nice a plea for a woman to make on a charge of infanticide; we may, therefore, conclude, that although the thing is possible, it is but a possibility, and it takes place under such circumstances as will be always ascertained by moral evidence.

2nd Objection.—*The lungs may float, when the child has been still-born, in consequence of their having been artificially inflated.* —One of the first writers to maintain that the lungs might thus be inflated, was Bohn, about the year 1700; in this opinion, although it has been strongly combatted by many writers, he is supported by most of the late authors on this subject, it must therefore be conceded that these organs can be artificially inflated so as to float on water; how then, are we to distinguish the effects of artificial from those of natural respiration? This has been attempted in a variety of modes, by Buttner, on the difference of the fœtal and adult circulation, as artificial inflation will not cause the pulmonary vessels to be filled with blood.

By the test of Ploucquet, already spoken of, grounded on the difference of weight, where the blood has passed through the lungs or not.

By the difference of colour of the lungs, from natural or artificial inflation, as proposed by Hartmann and others.

By lungs thus artificially inflated, sinking in water, on being deprived of all the air introduced into them, but which lungs dilated by natural breathing, cannot be made to do: this test is supported by BECLARD and WILDBERG; and finally,

By the state of the arterial duct, as proposed by Bernt.

We have already discussed these tests, and shown in what cases they might be useful and to what fallacies they were subjected. But there is a strong reason for doubting the importance of this objection; could a mother under the peculiar circumstances in which she is placed, without assistance, and in a weak and depressed condition, inflate the lungs of a new-born child to such a degree as to cause them to float? As is observed by the reviewer of Bernt's work, there is no case on record in which this was actually attempted, and if it was possible for her to do so, few cases could occur in which it would not be possible to ascertain the fact.

3rd Objection.—*That the lungs may float from putrefaction having taken place, where the child was still-born.*—In all such cases, the child must of course have been dead for some time, and the other parts of its body also in a state of putrefaction, besides which, it has been proved that this process does not occur in the lungs until some time after it has taken place in other parts of the body. But admitting that the lungs float in consequence of putrefaction, there are several modes of detecting the fallacy, as their odour, colour and consistence; the ease with which the air generated by the putrefactive action can be disengaged from them by pressure, thus restoring them to such a state of density as to cause them to sink in water; the circumstance of the air thus generated, being contained in the cellular tissue and not in the cells; hence, a portion cut from the internal part of the lung will sink, if the floating of the whole mass depended on putrefaction and not on respiration, and by an examination of other parts, as the thymus gland, &c. which will float equally with the lungs, if this depended solely on putrefaction.

Taking every thing into consideration, but little importance should be attached to this objection, and a careful examination will in general solve any difficulty [illegible] may arise.

In all extreme cases where the lungs are actually in a state of putrefaction, we should decline the attempt to solve the question by any inductions to be derived from them, but rely in a great measure on other proofs. Marc,* however, is of opinion, that even in such cases we should consider the lungs as affording a criterion of the fact of respiration having occurred.

There are also another set of objections adduced against the hydrostatic test, from the lungs sinking in water, although the child has outlived birth.

5th Objection.—*The lungs may sink, as the child may live some time without breathing.*—With this objection we have little to do, for although from experience it has been demonstrated that a child may survive birth for some time without respiring, and the laws of some countries decree that the slightest movement constitutes life, yet it is a case which in all probability would never occur as the basis of a charge for infanticide, and even if it should be, it is equally an objection to all other tests of vitality, as to those founded on the floating or sinking of the lungs. Unless, therefore, there is certain proof that the child did not stir, this test can never prove positively that the child was still-born, but simply that respiration never took place. But as a general rule in cases of infanticide, it would be better to consider a child which has never breathed as still-born.

6th Objection.—*The lungs may sink, from the respiration having been so feeble as not to distend them.*—That this can occur is now generally admitted, and substantiated by a multitude of facts, but this source of fallacy can generally be avoided by cutting the lung into fragments, and submitting each piece to a trial; if respiration has occurred, however imperfect it might have been, some part of the lungs must have been inflated, and will therefore float; the colour of the portions which have been dilated, will also serve as a guide; this was pointed out as early as 1689, by Craanen, but at the same time it does not hold good in all cases, as Bernt details a case where a child lived two hours, and yet every fragment sunk.

7th. Objection.—*That the lungs may sink from the effects of disease, although they have been dilated by respiration.*—Instances of such a state of things are by no means uncommon, although it must be co[illegible]t seldom takes place in children, but these derangements of structure can be readily detected, and due allowance made for them; and as in the latter objection, if the child has breathed, some part of the lungs will float. This objection is therefore of very little importance.

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* Manuel d'autopsie cadaverique, p. 134.

We have now given, in as brief a manner as possible, most of the tests by which it has been proposed to ascertain whether a child was born alive, and stated the objections to them; it now only remains for us to sum up the evidence on both sides, so as to present them at a glance.

1. Before the termination of the fifth month it may be assumed as a general rule that a fœtus cannot be born alive.

2. That it would be safe to affirm that a child which has not reached the seventh month, is incapable of sustaining an independent existence, although there have been instances to the contrary.

3. Even at the seventh month the chances of surviving are very few.

4. That a child has the greater chance of surviving as it approaches the natural term, but that from certain peculiarities in the functions of the uterus, it will be more likely to survive birth at the seventh than at the eighth month.

5. A child may be pronounced *viable* which has been heard to cry, and in whom organization is perfect; and *immature* when the reverse is the case.

6. When a child is pronounced viable, we must depend in a great measure on the appearance of the organs of respiration and circulation to determine whether it was born alive.

7. The tests drawn from the condition of the foramen ovale and ductus arteriosus, cannot be depended on except as collateral evidence; where, however, the foramen is closed or nearly so, and the duct is contracted towards the aorta, and is much less than the pulmonary trunk, the presumption would be that respiration had taken place.

8. That although there is a change in the form of the thorax and diaphragm, this is too variable to place much dependence on except as substantiating other proofs.

9. The changes in other organs, as the liver, bladder, &c. are subject to the same objections.

10. That our great dependence [illegible] be, on an examination of the alterations which occur in lungs after a child has breathed; of these

11. The change in colour cannot be relied on with certainty,

but still the presumption would be very strong, in cases where portions of the lungs are of a scarlet colour, whilst other parts retain their fœtal density and colour, that respiration had taken place.

12. The proof devised by Daniel, as to the relative volume of the lungs is too complex, and exacts too much accuracy to be depended on.

13. The static test proposed by Ploucquet is too uncertain and variable to furnish more than presumptive proof of respiration having been established, at the same time it should always be tried.

14. The surest test, under all circumstances, appears to be the hydrostatic, or that derived from the floating or sinking of the lungs.

15. But as the lungs may float from other causes than their having been inflated by natural respiration, we ought not from that circumstance to decide that the child was born alive.

16. Yet, as it is possible to discriminate between the floating induced by natural inflation, from that produced by other causes, the floating of the lungs is a safe test of the child having breathed before or after birth.

17. That the lungs sink in water from never having been dilated by the act respiration, but it may also occur from disease, &c.

18. Therefore their mere sinking is not a strict proof of the child never having breathed.

19. But the sinking, from their never having been naturally inflated, can be distinguished from that induced by other causes.

20. Therefore, with due precaution, the sinking of the lungs is a safe proof of the child never having breathed.

21. But neither the hydrostatic, nor any other test should be relied on to the exclusion of others, it requiring the concurrence of several to decide with certainty and safety.

ART. VI. *Laws of Irritation.* By SAMUEL JACKSON, M. D.

A FEW principles of extensive application, unity and simplicity of system, are the constant result of the improvement of a science, and may be regarded as certain indications of its advance towards perfection. The early periods of knowledge, are always marked by great multiplicity of causes, by numerous combinations of dissimilar elements, by want of uniformity and consistency in the explanation of details, and by complexity in their arrangements; and while these circumstances continue to exist, they are the sure evidences of its imperfect condition.

The correctness of this remark is shown in the highly cultivated and more perfected departments of science; such is astronomy, by which man penetrates the boundless realms of space, which enables him to spread out the heavens on a map, to measure the immense orbits of the planets, to compute their movements, to calculate with precision their revolutions, and predict with unerring certainty their various changes, and the phenomena depending on them. These operations, so wonderful in themselves, and apparently too vast for the comprehension of human intelligence, are accomplished by the application of a few laws, discovered by KEPLER, and calculations founded on the principles of gravity, unfolded by NEWTON.

The higher mathematics, as fluxions, geometry, algebra, present examples not less cogent; and in mechanics, hydrostatics, &c. we find elementary principles of general application, by which their problems are solved. The progress of knowledge in the certain sciences, uniformly demonstrates this truth, *that throughout nature, no effect occurs except after a certain order, or in conformity to established laws.*

The celebrated HOFFMAN having made the observation, that in nature nothing occurred without order, but always in conformity to a certain disposition of causes, drew the inference, that the vital actions of the human system, did not form an exception to this rule, but were performed in the same order and in conformity to natural laws. To explore and discover these "microcosmic laws," he considered was the proper duty of physicians, as affording the only solid foundation of a rational system, and on which could be erected any salutary precepts for the preservation of health.*

This philosophic observation of Hoffman, passed unregarded; and physicians, instead of entering on the route thus sagaciously indicated as conducting to new and interesting researches, continued the beaten track of symptomatology and etiology, from which nothing novel and improving was to be further expected.

After the works attributed to HIPPOCRATES, those of CELSUS, ÆTIUS, and ARETÆUS, but little of original and useful observation has been added, in those departments; at least, that is commensurate with the time and talent that have been devoted to those investigations.

It is obvious from the slight addition that has been the result of toiling ages dedicated in this manner, and the number of the most talented of the profession, who have been engaged in the labour, that medicine has nothing to expect from researches pushed in this direction. Our science has been long enriched with the most classic and just description of diseases, and their causes have been most industriously investigated. In those respects, we have not any thing to desire. As little improvement quite, is to be expected from the inane research for remedies. In the barbarous era of the sciences, (the middle ages,) when curative virtues were falsely supposed to reside in remedies, a vulgar belief still too common, every thing in nature, animate or inanimate, was attempted, and converted into a remedial agent. Not content with levying contributions, on whatever was to be found on the surface of the globe, its bowels were explored; and degraded by the absurdities of alchemy and the superstitions of theosophy, medicine was made to demand assistance from the stars. This universal perquisition to which all nature was idly subjected in the pursuit of curative means, created an immense mass of remedies; and the Materia Medica enlarged beyond its just bounds, was impotent in proportion to its magnitude. The slow introduction of common sense and philosophic observation into the science of medicine, have dispelled the gross illusions of ignorance; the just value of medicines is better determined, the vain pretensions of curative virtues have been stripped from their reputed possessors, and no judicious practitioner expects to find his remedies other than agents, by which he may modify or control the actions of the economy. It is not the remedy that cures the disease, but the mode in which the influence it is capable of exercising on the organs or tissues, is directed by the enlightened physician, by which this end is accomplished. It would be as rational to suppose the rudder steered the ship, and not the intelligence of the pilot by whom it is governed, as to attribute the benefits derived from the employment of medicines, in disease, to the possession of specific curative virtues.

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* Dissertatio septem leges sanitatis exhibens—procemium.

It is then, evident, that from these sources, no substantial acquisition to the science can be derived, and the time, and labour, and talent, that continue to be engaged in them, are unprofitably spent. Although these departments, long and assiduously cultivated, have ceased to be productive, medicine is not the less susceptible of improvement. Its ample domains embrace many divisions teeming like virgin soils, yet scarcely touched, that promise richer and more abundant harvests, than have heretofore crowned the exertions of talent, or rewarded laborious cultivation, devoted to the advancement of medicine.

Minute anatomy is to be explored. We have still to be informed of the intimate structure of the compound tissues, and organs, as of the mucous and dermoid tissues, the capillary system, the nervous system; of the brain, of the lungs, liver, &c. We are yet to learn, not only the proximate elements of the tissues, but the physiological state, the functions of each element, and their pathological conditions, as affected separately or conjoined; and their relations to exterior agents, or the mode in which they are affected by these agents, must be unfolded. Until this be accomplished, inexplicable difficulties, discordant principles, and impenetrable obscurities, must exist in pathology and therapeutics.

Independent of these subjects of investigation, others not less important require to be examined and cultivated. The connection between the actions of the different organs of the system, the reciprocal influence of the organs and tissues, the order followed in the production of their organic actions, and the general phenomena they observe, or the " microcosmic laws" of Hoffman, by which they are governed, must be fully made known, before the principles of medicine, can be regarded as positive, or the science claim, as it is entitled to do, a rank with the certain sciences.

Difficult as those subjects unquestionably are, they do not offer obstacles that may not be surmounted by perseverance and talent properly applied. Their abstrusity should not discourage, for it is to be remembered, that much of what appears now so clear to us, was formerly regarded as too recondite ever to be clearly comprehended, or to admit of explanation. That they will ultimately be perfectly understood, we have an assurance, from the spirit of inquiry and research having taken this direction; the zeal with which the investigation is pursued, and the many brilliant results that have already issued from the labours of the European medical philosophers. From their discoveries the aspect of the science has begun to change; it has assumed a more philosophic character; principles, without which no certainty can exist, are more valued in practice; empiricism, which confers no lasting improvement, is fast loosing its sway; a new era has commenced; and medicine is becoming, what it should never have ceased to have been, *the philosophy of organized matter.*

In the preceding number of the Journal, I submitted some views on irritation and its different forms, and it is now my intention to consider, in a summary manner, its laws. The ground covered in these essays, embraces most of the general principles of pathology, and merits, consequently, a close and profound investigation. It involves a correct knowledge of the nature, causes, mode of production, phenomena, and treatment of a large portion of the diseases to which the animal system is subject; and the correct determination of these questions, will give stability to principles that have been incessantly fluctuating, and consistency to practice that has too long been deficient, in the precision of its principles.

First law.—Irritation in all its forms and grades, is produced by normal excitants, or healthy stimulants, acting in excess.

The most familiar illustration of this law, is derived from the effects of caloric or heat. This principle is the most universal and essential of the stimulants, that maintain the vital or organic actions. In no form of organized matter, however rude its condition, can vitality be manifested, if not sustained by caloric. It is an indispensable agent of the healthy or natural actions of the animal economy, and of the vegetable creation.

Let it, however, be made to act on a part of the organization in a degree beyond the natural standard, the organic action is increased, and, according to the degree of temperature and time of application, it mounts into irritation, of various degrees of intensity, from a slight erythematic blush, to rubefaction, inflammation, vesication, and gangrene, or disorganization, the death of the part, &c.

From the general action of heat on the system, result analogous operations. In the vascular system, accelerated circulation and movements of the fluids; in the mucous and serous tissues, and secretory organs, irritations, augmented secretions, exhalations, hæmorrhages, inflammations; in the parenchymatous organs, congestions, apoplectic and inflammatory; in the nervous system, spasms, convulsions, &c.

The action of this agent is a most striking exemplification of the mode of production of the morbid condition. No vital phenomena, no organic action, can commence or be maintained, independent of its agency; yet its simple augmentation gives origin to every form of morbid action, to the production of every state of disease, and to death. Caloric is at once the indispensable agent of vitality—the certain cause of disease, and of mortal dissolution.

Oxygen gas is a stimulant not less universal and essential to the maintenance of vital actions than caloric. No where is vitality known to be manifested, or to continue to exist, without the presence of oxygen. In its natural condition as a vital stimulant, it is diluted largely with nitrogen, in the proportion of twenty-one parts of the one, and seventy-nine of the other, in atmospheric air: but place animals, that perish in a few minutes, when deprived of it, in the pure gas, and they also perish from the excess of the excitement that ensues, and with the evidences of increased irritation.

Similar examples might be adduced from the effects that are occasioned by other natural excitants, applied in excess, as light to the eye, sound to the ear, food, &c.

Second law.—Irritation is a consequence of an undue increase of excitability or irritability, the excitants or stimuli remaining in their natural state.

In a system that is well constituted, in its healthy state, an equilibrium exists in the excitability, excitement, and circulation of the different organs and structures. Whenever these are diminished, by any cause, in one apparatus of organs, they are increased in others. Cold applied to the surface, by the abstraction of the stimulus of caloric, diminishes the organic actions or excitement of the skin; it becomes pale, the blood is no longer called into its vessels, it shrinks and condenses; its functions are suspended; its capacity to be excited is impaired; or, in other words, its irritability is deficient. This condition of the exterior, occasions its opposite state to arise in the interior; there, the excitement, the circulation, the excitability augment. Individuals who are exposed to the operation of cold, until their surface is completely chilled, on entering a heated apartment, or eating a full meal, or taking ardent spirits freely, will be suddenly attacked with acute inflammation of some of the interior organs; they will suffer a pleurisy, a pneumonia, a gastro-enteritis, dysentery, rheumatism, &c.—according to the organ that had been previously in an irritated state, or is the most excitable.

Third law.—Irritation is produced by the excessive use of an organ; by the prolonged continuance or abuse of its natural function.

Two kinds of actions belong to the tissues and organs; the one common to all the organization, by which nutrition is performed; it is the organic action: the other peculiar to each species of structure, by which it fulfils its particular office in the animal economy; it is the functional action. Whenever the functional office of an organ is called into activity, it is attended with an increase of excitement; its vitality is exalted; the organic action is augmented; the fluids are determined to it in greater abundance. It is the first step towards irritation. The prolongation of this action for too great a period, or its too frequent repetition, so modifies the mode of nutrition, that the tissues do not revert back to their natural state, and chronic irritation becomes established with disorder of function. From this last cause, derangement of the digestive faculties is so common a complaint, amongst those in easy circumstances. By the arts of gastronomy, the palate, which should be the sentinel of the stomach, is made to betray its trust, and tempts constantly to an inordinate and too frequent repletion of that organ. In like manner, other organs suffer from the above cause; the brain from the excitement of the affective passions, and intense study; the eye and vision from too great light and reading; the organs of respiration from singing and speaking in excess, and from coughing; the joints from severe exercise, &c.

The irritation arising from this cause is sometimes acute, and is rapidly produced; or irritation that has long remained chronic, is suddenly exalted into acute irritation, in some of its forms. Thus gastro-enteritis often supervenes on a debauch, or from some indigestible food; inflammation of the brain or its meninges from strong intellectual excitement; after forced marches, soldiers are often attacked with inflammation of the joints and muscles. I attended a short time since, a woman, who did not enjoy good health, and was of very sedentary habits. She walked to Kensington on business, and the next day had dropsy of the right knee-joint, secretory irritation having been excited, by unaccustomed exertion.

Fourth law.—Irritation always commences in a single organ or tissue—when it acquires a certain intensity, it is transmitted to some one, or two, or three tissues or organs, but is never general.

This law is the consequence of our second law of irritability.* It is also a necessary result of the compounded nature of the organization. The differences that prevail in the excitability, organic actions, and functions of different structures and organs which cause in them a varied susceptibility to the impressions of irritants. No example of a universal irritant, that is, having the power of equally exciting every structure can be adduced. On the contrary, the more thoroughly the direct actions of external agents on the system are studied, the more evidently they appear to be limited. The larger part are confined in their actions to impressions on the exterior surface of relation—the skin, or to the interior surface of relation—the mucous membranes. Some few, while they make impressions on these surfaces, enter the circulation, and immediately influence particular tissues, constituting their specific mode of action. Thus opium acts as any common irritant to the surface on which it is applied, but specifically affects the brain. So long as it cannot be shown, that any, even the most energetic of our agents, are possessed of the power of affecting directly all the tissues and organs, it can be only an assumption, unsustained by facts, to clothe morbific agents with this attribute. The organic tissues to which irritations are most easily transmitted by sympathy, are the mucous membrane of the stomach, the pia mater and arachnoides; the brain, the capillaries, the interior membrane of the heart and large vessels. When this last experiences irritation, then fever exists, which is no more than a symptom of cardiac irritation. In the diseases called fevers, when this irritation does not occur, the proper phenomena of fever are absent, or when it ceases in the course of the disease, the febrile symptoms disappear, though the condition of the patient may be absolutely much worse.

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* See Journal, Vol. IV. N. S. p. 79.

The more numerous are the tissues that take on irritation, and the more the organic actions are exalted, the more are the functions disturbed, and the greater is the difficulty of a restoration to a healthy state.

Fifth law.—Irritation established in one or more tissues or organic apparatus, produces a reduction of organic action, irritability, or asthenia, in some other tissue or organic apparatus; hence also irritation can never be general.

This law follows from the third law of irritability.* Irritation, increased determination of blood, and augmentation of irritability are, in the first periods of irritation, uniformly concatenated. But the quantity of blood remaining the same, it cannot be determined and congested in an organic apparatus in an unnatural proportion, except at the expense of other portions of the organization. From this cause the commencement of every intense irritation affecting the thoracic, and especially the abdominal viscera, is accompanied with chills or rigors. The blood abandons the capillaries of the periphery, which becomes pale and shrivelled, it forsakes those of the brain, whose functions are impaired, and is precipitated into the interior organic structures, until the irritation increasing, it is sympathetically transmitted to the heart; when reaction takes place, the blood resumes its former course, the organic actions are re-excited in the brain, and surface, and if the natural equilibrium be restored, the morbid disturbance ceases. While a balance is preserved in the organic actions of the different structures, whatever may be their activity, no disease can exist: it is the essential circumstance in the constitution of disease, that the equilibrium of the organic actions be destroyed, that they are in excess in some apparatus of organs, and deficient in others. A disease of general irritation is an impossibility.

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* See Journal, Vol. IV. N. S. p. 80.

Sixth law.—Irritation, immediate or sympathetic, occurs most readily in tissues rich in capillaries, and freely supplied with nerves; that is, the most vital tissues are the most common seat of irritations.

Such are the mucous membrane of the stomach, the brain and its meninges, the heart, the parenchymatous organs. It affects in preference, those tissues also, that are habitually sur-excited, for their vital forces are then exalted. This circumstance occasions the gastric irritations to prevail more generally, than those of any other organs. The stomach is in the highest degree vascular, it is largely supplied by nerves, both of the great sympathetic and those of relation, or cerebral—it may correctly be regarded as the centre of the organic sympathies; and, in civilized life, there are few individuals, in whom, by improprieties in the quality or quantity of ingestion, it is not kept constantly in a state of sur-excitement, and, consequently, predisposed to take on irritations. In this state, gastro-enteritis is almost certain to ensue from any violent impression on the economy, as the action of a morbific cause, of the more energetic therapeutic agents, painful accidents, wounds, or surgical operations. From a neglect of this circumstance, surgeons often lose their patients, after capital operations, from the explosion of gastro-enteritis, which they call sympathetic fever and constitutional irritation, and treat, at times, most injudiciously with stimulants.

Seventh law.—Irritation is intermittent, remittent, and continued.

It assumes these characters in each of its forms, whether sanguine, nervous or lymphatic. The continued irritations have been long known, but it is only of late years attention has been directed to the fact of their intermittance. The cause of the periodical character manifested so frequently by irritation, has not yet been satisfactorily explained, many hypotheses have been started for the solution of this curious and difficult problem; but they are deficient in deductions sustained by well observed facts. It must continue to be regarded as amongst the mysteries of the science, whose solution is reserved as a triumph, at a future day, to reward the exertions of favoured genius, or of persevering research.

Sanguine irritation of the intermittent type, is usually of a light grade; and, I am disposed to believe, is peculiar to the irritations of the gastro-intestinal mucous membrane. At least, it is the lighter grades of irritation of this membrane, in which the periodical type is most frequently seen, as in intermittent fevers. When this type exists, accompanied with permanent irritation in other organs, as in phthisis pulmonalis, &c. constituting hectic fever, irritation of this membrane is still its exciting cause. I have never seen hectic fever without this complication; where it is absent, patients are not tortured with the constant recurrence of hectic paroxysms.

Remittent and continued irritations, are not specifically different from that which is intermittent. They are more intense, and the intermittent type disappears with the increase of the intensity of irritation. Acute inflammatory irritation, when it occupies the gastro-enteritic mucous membrane, the cerebral medulla, and lining membrane of the heart, is either remittent or continued, and always of the last type when of a certain grade. The more numerous the tissues that are the seat of irritation, the less does the intermittent character prevail.

Intermittent nervous irritation occurs in epilepsy, neuralgia, hemicrania, &c.; and in the lymphatic system, irritation assumes the same character in elephantiasis.

Eighth law.—Irritation may be fixed, moveable or wandering, or displaced.

Sanguine irritation is fixed or persistent in the phlegmasias, in remittent and continued fevers, in chronic inflammations. When uncombined with nervous irritation, it is seldom wandering, but often presents this character, in that complication. It is very rare, that moveable irritation produces organic alteration, although its symptoms are sometimes formidable. It is most commonly met with in those of the nervous temperament, especially women, who are labouring under chronic inflammation of the uterus. The Alms-house Infirmary, generally contains patients, in whom it is very strikingly manifested. During the last winter, there were three patients, in the women's ward, of this description. In those patients, every part of the system in succession, was rapidly invaded by irritation, suspending or perverting, for a time, the functions of the different organs, the seat of attack. The head, throat, pulmonary organs, abdominal viscera, in turn, appeared to be violently disordered, and even to be threatened with speedy disorganization; yet the symptoms were easily appeased, or early disappeared. At one time, they would be affected with stupor, delirium, or rending head-ache; then it would be the throat, affected with suffocating spasms, a cough like that of croup, or difficulty of swallowing; soon after would appear, pain in the chest, difficult respiration and all the symptoms of the most alarming pneumonia or pleurisy; and again, incessant vomiting, pain in the hypochondria and epigastrium, extreme tenderness and distention of the abdomen, &c. might have led to suspect the existence of gastritis, hepatitis or peritonitis. In one of those patients, after suffering a long period under the diversified symptoms that have been mentioned, the irritation was suddenly transferred to the left mammary gland. In the course of a night, the gland became very much enlarged, hardened, and painful, while the symptoms of the internal affections disappeared; it was four weeks before the acute inflammation of the gland was subdued.

When sanguine irritation becomes displaced, that is, abandons its original seat, and is transferred to another tissue or organ, it constitutes *metastasis.* This occurrence is always favourable, when it takes place from internal to external surfaces. It is followed by cessation or diminution of symptoms and danger. It is seen in variola or natural small-pox; the gastric and intestinal mucous membrane is first affected, and gives origin to the severe fever of the first state, but, as soon as the disease commences in the skin, the internal irritation subsides, and the system is tranquillized. Should the gastric irritation persist, and be not totally translated to the skin, the pocks do not form properly, the fever continues, and most commonly the patient perishes.

The metastasis of irritation from external parts to internal organs, is an unfavourable circumstance; is attended with aggravation of symptoms, and increase of danger. It occurs in the translation of gout and rheumatism from the extremities and muscles to the stomach, bowels, heart and brain: it occurs also in the recession of the exanthematic and other eruptions from the skin to the mucous, bronchial, gastric, and intestinal surfaces.

Irritation, in abandoning its original seat, is sometimes translated to a secretory organ, or surface, exciting a profuse discharge of its peculiar fluid, and sometimes hæmorrhage. The occurrence is most generally salutary, the depletion of the secretion curing the irritation. This species of metastasis, receives the name of *crisis*, and the evacuation is called critical.

Nature is sometimes imitated by art in this mode of curing diseases. On this principle are purgatives, diuretics, sudorifics, and excitants, administered in diseases of irritation, the phlegmasias, fevers, &c. and the practice is frequently successful. A metastasis or crisis, accomplished by artificial means is termed *revulsion*. Should the irritation prove to be deeply radicated, the practice is then hazardous: it is the play of the gambler—double or quit—all is gained, or all is lost. There is besides this disadvantage against the patient, that by this disturbing and violent proceeding, although he is not the immediate victim of the disease, his organs suffer so much by the treatment, that he is often a stranger afterwards to the comforts of health. I have had under my care for a few weeks, a lady of a delicate constitution of body, who was treated last August for an attack of bilious fever, with several emetics, active purgatives, antimonial powders, &c. It is true she did not die of the fever, but she has never recovered, and has continued to suffer most dreadfully from chronic inflammation of the stomach, and not improbably ulceration of its mucous membrane, the consequences of the harshness of the treatment to which she was subjected. The only prospect of relief she can have, will be a perseverance in a judicious regimen for many months; though it is more probable she will never experience a restoration to perfect health.

Nervous irritation is much more frequently fluctuating than sanguine irritation. Hysteria is the evidence of the correctness of this remark. Hence it simulates almost every morbid irritation to which the human system is subject, attacking in its wanderings, every tissue and every organ, alarming, with the apparent severity of its symptoms the inexperienced, and often deceiving the more judicious.

Lymphatic irritation has been so little studied, and its history is so very imperfect, I have no knowledge of facts in relation to its fluctuation or displacement. I am disposed to believe, from the intractable character of the lymphatic diseases, that it is always persistent.

Ninth law.—Transmitted irritation is the same as the primary irritation from which it is derived.

Sanguine irritation, of sufficient intensity to be communicated by sympathy from one organ to another, will awaken irritation of its own kind, and not nervous or lymphatic irritation. Hence the affection of the brain in gastro-enteritis, is not a nervous irritation, as it is so frequently misnamed, but is inflammation of that organ or its membranes. Moveable irritation in like manner, will not easily produce persistent irritation; and nervous irritation in its transmission to different tissues and organs, excites in them its own specific action.

Tenth law.—Irritation of surfaces on which excretory ducts open, is transmitted through those ducts into their glands.

Irritation excited in the mucous membrane of the gums and cheeks, as by chewing pellitory root, the inflammation arising from mercurial preparations, occasions salivation, by being extended into the salivary glands. The irritation of emetics and some purgatives on the gastro-duodenal mucous membrane, is transmitted along the ductus choledochus into the interior of the liver, and causes secretion of bile. Hepatitis arises in most instances, if not always, in this manner, and is a consequence of gastro-duodenitis. The parenchyma of the liver, I question, is never primarily affected. I examined eighteen months since, the body of a man, a livery stable keeper, addicted to liquor, who died of acute hepatitis. On cutting into the liver no abscess was found, though it appeared to be soaked in pus. The pori biliarii were so distended with this fluid, it followed every cut of the knife. I made an examination of a negro, who died last fall in the Alms-house Infirmary of the same disease. It was not as far advanced. When the liver was sliced, minute white points were seen scattered over the surface. They proceeded from a thick pus contained in the pori biliarii. By pressure it could be forced out and assumed a vermicular shape. The parenchyma was perfectly healthy.

Irritation in the urethra, from a mechanical cause, as a bougie, is often observed to increase the discharge of urine; and cantharides, by irritating the mucous membrane of the bladder, also produces a diuretic action.

This law was first noticed by Bichat.

Eleventh law.—Chronic irritation, and those that do not awaken the sympathies, end by disorganizing the tissue in which they are located, or, by denaturalizing its structure, from the perversion of its nutrition.

The quiescence of the sympathies in chronic and the sub-acute irritations, has been, and continues to be, a source of constant and most fatal error. From the consequent absence of febrile symptoms, they are regarded as diseases of debility, and stimulants and tonics are lavishly exhibited, which, in the greater proportion of cases, confirm the existing lesions, and precipitate the inevitable result. No more pregnant instance of the impropriety of adopting and employing terms in science, without a critical attention to their meaning, without attaching to them precise ideas, can be adduced, than the use of the term debility in medicine. Applied in a most vague manner, deriving a sanction from misunderstood symptoms, and not from the absolute condition of the organic actions, and nature of the lesion, innumerable have been the victims, that in all periods, have been sacrificed at its shrine, and inconceivable the mass of suffering of which it has been the cause. On no subject, does the science more require an elaborate disquisition, with a view to a determination of its meaning, of the physiological and pathological condition it is intended to designate, than on this term debility.

The transformations of tissues so frequently met with, as the conversion of fibrous, serous, fibro-serous, and mucous tissues, into cartilage, bone, &c. and the production of heteroclitical formations, as tubercles, melanosis, encephaloid matter and cancerous degeneration, are the consequences of chronic irritation, perverting nutrition, denaturalizing the play of the vital affinities, from the continuance of the departure of the organic actions from their natural state.

Twelfth law.—The various kinds of irritation may be generated by the same cause.

This fact is sufficient to demonstrate, that in a practical point of view, or for the elucidation of pathology, etiology or the study of the causes of diseases proves of little utility. It belongs to Hygiene or to legislative medicine to investigate the causes of diseases, that their occurrence may be prevented, or their influence be diminished. The physician occupiés himself with investigating the state of the system, as modified by morbific agents; with determining the lesions and nature of the actions, that constitute disease.

The influence of morbific causes on the system, is for the most part uncertain. Their effects are constantly modified, even when their action is specific, by the temperament of the individual, and the state of the organs, constituting his predisposition; and when they have no specific powers on particular structures, the disturbances of function and lesion of structure, will wholly depend on those circumstances. It is this fluctuating condition of the human organization, varying, like the features, in each individual, and constituting a peculiarity for each, that forms a moveable, uncertain element in every pathological problem, and renders doubtful every rule of practice that is not based on principles, but depending alone on empirical experience.

This law explains the diversities observable in the production of diseases in individuals exposed to the same cause. Thus cold will occasion a sanguine irritation in some of its forms; inflammation, exhalation, &c. in one; lymphatic irritation, engorgement of the lymphatic vessels, enlargement of lymphatic glands in another; nervous spasms and còlics in a third. In the same manner, mechanical violence will excite inflammation, suppuration and ulceration in a sanguine temperament; cold, indolent tumour, white swelling, scrophulous ulceration, in the lymphatic temperament. Syphilitic chancres will cause inflamed suppurating buboes in the sanguine; and indolent, lymphatic engorgement, increased by warm poultices, refusing to suppurate, and dissipated with difficulty, in the lymphatic.

In the mixed temperaments, the different irritations are combined, as the sanguine and nervous, sanguine and lymphatic, &c. which create as many differences in the symptoms of diseases.

Thirteenth law.—Irritation established in a tissue, has a disposition to be repeated in all the analogous tissues.

Thus chronic inflammation of one serous tissue, in the end, becomes extended to several; and we have chronic peritonitis associated with chronic pleuritis and pericarditis, secretory irritation of one of those membranes, is also reproduced in the others, whence ascites, hydrothorax, and hydropericardii, are so frequently concomitant. I have repeatedly seen this verified by dissections.

The same thing is witnessed in irritations of the lymphatic glands, when they acquired intensity, being repeated from one set of glands to another. Cancerous degeneration of structure, has also the same tendency to repetition; and it is manifested in the cutaneous eruptions. Other examples might be adduced.

The general fact announced in this law, forms what is called diathesis, as the scrophulous, cancerous, hydropic, &c. diathesis.

Fourteenth law.—Irritation in the dermoid and mucous tissues, produces irritation in the lymphatics and lymphatic glands communicating with them; and occasionally in contiguous membranes.

Chronic enteritis occasions enlargement of the mesenteric glands, the marasmus infantilis of English writers. In chronic bronchitis, the bronchial lymphatic glands tumefy; and in individuals of lymphatic temperament, tubercles are developed in the lungs. The chronic irritations of the skin, in like manner, produce enlargement of the lymphatic glands, and in those of lymphatic temperament, scrophulous ulceration ensues.

The extension of irritation to contiguous membranes, is not as frequent in its occurrence. The intestinal and gastric mucous membrane will be inflamed; will ulcerate or be disorganized, yet the muscular tissue adjoining, and the peritoneal coat will remain unaffected: notwithstanding which, it is not an unfrequent occurrence, for inflammation to extend from the mucous to the muscular and peritoneal membranes. This occurs in perforations of the stomach and intestines; in some cases of dysentery and enteritis, when the peritoneum inflames, and peritonitis becomes a complication with those affections. Sinapisms also by irritating the skin, will reawaken irritation of the sero-fibrous tissues of the joints, in those affected with gout, accomplishing a metastasis from the stomach or bowels; and blisters applied over joints, when attacked with acute inflammation, aggravate the disease.

Fifteenth law.—The transmission of irritation is effected through the medium of the sympathies, whose organ is the nervous system.

To elucidate this law, would lead to an investigation of the sympathies, their history and general laws, which form a distinct subject of research.

The preceding constitute a summary of the universality of facts, or general laws, observable in the phenomena of the organic actions that have been defined irritation. Many of them are contained in the propositions of Broussais, some are derived from the general anatomy of Bichat, and all I have verified, by an attentive observation of disease, in an extensive clinical experience, afforded to me by the Alms-house Infirmary; and by numerous autoptical researches in the dead subject, for which that institution offers valuable facilities.

ART. VII. *A Method of detecting minute quantities of Opium, in solution.* By R. HARE, M. D. &c. &c. &c.

THROUGH the discoveries of SERTUERNER, it is now well known, that opium contains an alkaline substance, called morphia, to which it owes its efficacy in promoting sleep, and relieving pain: also, that this alkali is naturally in union with an acid called meconic, which produces a striking red colour with solutions of red oxyd of iron. Nevertheless, this property has not been proposed as a means of detecting opium; which has probably arisen from the circumstance that the meconate of iron does not precipitate. I have, however, contrived a method by which a quantity of opium not exceeding that contained in ten drops of laudanum may be detected in a half gallon of water.

My process is founded on the property which meconic acid has of precipitating with lead. Hence, by adding a few drops of acetate of lead to any infusion, containing any quantity of the drug in question, not more minute than the proportion above mentioned, an observable quantity of the meconate of lead falls down. The precipitation, where the quantity is small, may require from six to twelve hours, and may be facilitated by a very gentle stirring with a glass rod to detach the flocks from the sides of the recipient, which should be conical, so as to concentrate them during their descent. The meconate being thus collected at the bottom of the vessel, let about thirty drops of sulphuric acid be poured down on it by means of a glass tube. Let this be followed by as much of the red sulphate of iron. The sulphuric acid liberates the meconic acid, and thus, enables it to produce, with the iron, the appropriate colour which demonstrates the presence of that acid, and consequently of opium.

ART. VIII. *Method of Preparing Denarcotised Laudanum.* By R. HARE, M. D. &c. &c. &c.

AGREEABLY to the observations of the French chemists and physicians, the unpleasant effects of opium reside in a principle called narcotine, and ROBIQUET has informed us, that by digestion in ether, the drug may be depurated of that noxious principle. It struck me, as soon as I became acquainted with the statement of Robiquet, that it was of the utmost importance to humanity to have it tested, and the result made known to my countrymen, if favourable.

Some opium, shaved by rubbing it on the face of a jack-plane, was subjected four times successively to as much ether of the specific gravity of .735 as would cover it, allowing each portion to act upon it for about twenty-four hours.

The opium was afterwards subjected to as much duly diluted alcohol as would have been adequate to convert it into laudanum, of the common kind, had it not been subjected to the ether. In the ether which had been digested on the opium, a deposition of crystalline matter soon commenced. The stopple being removed, and the mouth of the containing vessel, (in this case, a common French tincture bottle,) being covered with blotting paper, in a few days nearly the whole of the liquid evaporated spontaneously, leaving much crystalline matter mixed with colouring matter. The former is, no doubt, the principle distinguished by Robiquet, since called narcotine.

The digestion of the opium with the ether, is conveniently performed in the papins digesters, which are sold at some of the hardware stores in this city.

The ether should be kept near the temperature of ebullition.

The first use which was made of the denarcotised laudanum, was by way of an enema of thirty drops, in the case of a child tortured by ascarides, to whom it gave early relief, inducing a comfortable, and apparently natural sleep, and causing subsequently no unpleasant symptoms. The second instance was a case of severe head-ache, which was relieved in about thirty minutes, by ten drops taken into the stomach. A refreshing slumber succeeded, which was not followed by any of the distressing sensations to which the patient has always been subjected, after taking common laudanum.

I subjoin the results obtained, with the denarcotised laudanum, by a veteran in the healing art.

"Dear Doctor.—When you presented me with some laudanum, prepared from opium deprived of its narcotine, you wished me to inform you in what it differed in effect from laudanum prepared in the usual way. I have tried it in but four cases; all of which, however, were fair ones for its employment, as each had constantly experienced the most distressing effects from opium in every way in which it had been exhibited. I will relate them in order.

"Case I. Was that of a lady who was suffering severely from a chronic affection of the uterus. In her case, opium, in some form or other, was absolutely necessary; and every form commonly known was resorted to with a view of diminishing its terrible after-effects upon her stomach and head, but without success.

"I recommended the denarcotised tincture of opium to her in a dose similar to that she had been in the habit of using of the common laudanum, &c. The first two or three doses were followed by the common after-feelings, owing most probably to the impression of the former forms in which she used the opium not having entirely ceased; for soon after, and to the present time, a period of two weeks, she experiences the most decided relief from pain, without the slightest inconvenience following its use.

"Case II. Is one where severe after-pains followed delivery, and in which every other remedy almost, save opium, was tried without success for their relief. In this case, opium in no shape whatever could be given internally, or even employed externally, without the severest sufferings following.

"The denarcotised laudanum was given with the most entire success, and without the slightest inconvenience following its exhibition. The lady called it the 'divine tincture of opium.'

"Cases III & IV. Were the ordinary cases of opium disagreeing in any form; the exhibition of the tincture in question, in neither case was followed by any unpleasant feeling.

"From this experience, though limited, I am led to anticipate the great desideratum in the use of opium is obtained. With many thanks for your liberal supply of the article for my trials,

"I remain, as ever, yours,

"*March 25th*, 1827. W. P. DEWEES."

ART. IX. *Experiments and Observations on Tendons.* By RICHARD LEE FEARN, M. D. of North Carolina.

THE appellation, Tendon, from the Greek Τεινων, is used to denote a dense, silvery white cord, attached generally at one end to the extremity of a muscle, and at the other, fixed to the periosteum of a contiguous or distant bone.

The tendons, though usually cylindrical, are sometimes flattened, fasciculated, bifurcated, or intermixed with portions of muscle; as in the complexus, &c.

Some anatomists have considered them as merely elongations of the periosteum, extending to meet the muscular fibres; but this opinion is disproved by their occurrence in the middle of muscles, as in the digastricus, &c.

Tendons are composed of very fine longitudinal fibres, of a pearly white colour, closely united, not interlacing, but placed side by side, and held together closely, by a fine cellular substance.

The tendon thus composed, is generally covered by a loose cellular tissue, which admits it to glide freely over the adjacent parts; this motion is occasionally facilitated by a synovial capsule. (BICHAT.)

Perfection in the designs of nature manifests itself conspicuously in the substitution of tendons for muscles, in the vicinity of joints and other parts. Possessing great strength and occupying but little space, they afford variety and facility of motion, combined with perfect symmetry, while the influence of the most powerful muscles is conveyed to distant parts.

The liability of the different tissues of the human body to disease, and its consequences, is directly proportionate to their vitality. In corroboration of this position, analogy may be deduced from the lowest order of animals up to man; each, as we ascend in the scale, being more subject to disease and death, than the one which preceded it.

In tendons, vascularity and sensibility are presented, in modifications and forms, so indistinct and equivocal, as to induce many highly respectable authors to deny their existence. Under certain circumstances, as in inflammation, these vessels attain the power of carrying red blood, and are thereby rendered obvious, at the same time sensibility is extremely acute.

Thus, the tendons, being in health accessory to highly important operations in the animal economy, occupy as seats of disease the lowest station. Hence many of the most minute observers and reporters of disease, both ancient and modern, have not considered them worthy of a place in their writings. On this account, the practitioner will seek in vain for information how to proceed; he will only find here and there isolated facts, but no where principles to guide him in the various cases, which may fall to his care. Under the full influence of these considerations, together with the occurrence of a very interesting case in the Infirmary of the Philadelphia Alms-house, under the management of Professor HORNER, I have been induced to institute some experiments on this subject, the result of which I shall endeavour to detail as accurately as possible in this paper.

The case above alluded to, was that of a rupture of the tendo-achilles, treated by Dr. Horner, a concise description of which was published by him in Vol. III. N. S. of this Journal. By referring to my notes taken in the men's surgical ward of the Alms-house, I extract the following minute detail of the case:—

March 31st, 1826.—JAMES LANG, aged fifty-four years, of good constitution and temperate habits, a weaver by trade, was admitted to-day into this ward, with his leg and ankle swelled so extensively, as to preclude the possibility of obtaining a knowledge of the nature or extent of the injury. He gave the following account of the accident.

While from home in the afternoon of yesterday, a great quantity of rain fell, producing torrents in the streets. On his return in the night, (it being very dark,) he stepped off the curb-stone into a gutter, three and a half or four feet deep, formed by the rain. The toe rested beyond the middle a little on the opposite side, his heel by this means being forced much lower to find support. He heard, (at this time,) no crack like the report of a pistol, or the smack of a whip, nor did he feel as if his heel had crushed a nut, or sunk into the ground, as most authors describe; but he heard or felt something give way, like a weak string pulled asunder under water. Pain was instantaneously considerable; and when he arose on the opposite side, was unable to walk in the usual way. No weight could be borne on the toe of the injured foot, for the ankle was, (in his own words,) as limber as a rag; but, by balancing the weight of the body perpendicularly on the injured ankle, and then gradually leaning forward, he managed to move forty or fifty paces farther to his dwelling. To-day, by the aid of a crutch, he walked nearly three miles to this house; in the mean time, suffering excessively with fatigue and pain.

Absolute rest and other antiphlogistic means were resorted to, to assuage pain and lessen the intumescence, for several weeks before it was effected, when the injury was found to consist in a rupture of the tendo-achilles. About this time, (the last of April,) Dr. Horner, taking charge of the surgical wards of the Alms-house, directed a bandage to be applied from the toe to the knee, and a splint to be placed on the anterior part of the leg and foot. These were continued a few weeks, when nothing like a reunion or a tendency to it being apparent, it became necessary to resort to other means for effecting a cure. Under these circumstances, all former dressings were removed, and a re-examination of the case made in the presence of the medical class, and the resident students of the house; all concurring with Dr. Horner in the conviction that there was a complete rupture of the tendo-achilles, one and a half or two inches above its insertion. The ends of the tendon appeared to have formed no adhesions to the adjacent parts, but moved freely from side to side, either when the antagonising muscles were in action or relaxed. The ends could be placed nearly in contact, by a favourable position and compression of the muscles.

Dr. Horner, supposing by analogy, that the treatment so successfully employed by Dr. Physick in cases of pseudo-arthrosis, might be applicable here, passed by means of a seton needle, a riband three-quarters of an inch wide through the space intervening between the ends of the ruptured tendon. The leg was again bandaged by means of the roller as before, and the splint applied anteriorly. This process was persevered in for forty-six days, when the seton was removed. Inflammation had greatly indurated the parts adjacent to the seton, and when felt through the integuments, gave more the sensation produced by a cartilage or bone, than common inflamed cellular substance. The ends of the tendon could not be distinguished, but were merged in the indurated mass. The splint and bandage were continued three or four weeks longer; the ulcer, in the mean time, being dressed with simple cerate, healed.

July 25th.—Until this time the patient has been kept perfectly at rest. The splint and bandage being now removed, he is permitted to take gentle exercise by walking.

August 20th.—He is able at this time to walk with ease, and without extraneous aid.

September 22d.—The patient's tendon is now considered perfectly restored to its pristine strength, he being able to bear the whole weight of the body on the toe of the injured side, without pain. The restored portion, since the last examination, has decreased in size, but is yet much enlarged.

January 1st, 1827.—The patient walks with facility, nor does his gait indicate which side has been affected. On a comparison with the tendon of the other leg, by minute examination, the reunited tendon was found considerably enlarged, from its origin in the muscles, to its insertion, and nearly the same size throughout. The muscles attached to it, although for a time diminished in bulk, are now similar in all respects to those of the opposite leg.

This case, although in itself sufficient to attest the efficacy of the seton, required the concurrent testimony of additional observation, to establish its application to even analogous cases, with perfect confidence. For this purpose I cite the following experiment.

Experiment 1*st.*—July 21st, 1826.—A dog being placed on the table and held firmly by assistants, I made a very small puncture through the integuments, and divided the posterior third of the tendo-achilles, an inch and a quarter above its insertion. The object in making the division in this manner, was to retain a sufficiency of the tendinous fibres to keep those divided in contact. If an immediate union had occurred, I should in this manner have ascertained its nature, &c.: if not, the effect of a wound in these parts. A few hours afterwards, (the dog in the mean time being permitted to run loose in the yard,) although only about one-third of the tendon had been cut, I found the whole completely divided, and the ends lying loose and separated to a considerable distance. This was then, more by accident than design, brought nearer to a state of complete rupture, than could have been effected in any other way. It would be impossible to produce an artificial rupture of a tendon so large as the tendo-achilles, without so much injury to the contiguous parts, as to render the experiment abortive or very equivocal.

August 24th.—No more attention has been paid to the dog until to-day, when I find, that the inflammation, induced by the violence done the tendon, had completely subsided and left scarcely a trace behind. Neither enlargement, induration, nor any other indication of an effort towards reunion, is manifest. The dog carries the leg raised, with the foot dangling loosely. The integuments between the separated ends of the divided tendon extending an inch and a half or an inch and a quarter, are perfectly loose and relaxed. These I rolled one on the other forcibly, by the fingers, for the purpose of inducing inflammation. By means of a bandage and splint, a proper position of the parts was maintained, for sixteen days, when there resulting no evident benefit, the dog was again liberated.

October 21st.—Upon a most minute examination, the situation of the parts cannot be ascertained to differ in the least from its situation when examined in August. By means of a needle, I passed a small silk riband, midway between the retracted ends of the tendon. The dog was set at liberty.

October 23d.—A great deal of inflammation is induced by the seton. I again applied dressings so as to keep as nearly as possible the ends of the tendon in proper position, and the dog at rest. The ends of the tendon could not, under the most favourable circumstances, be approximated nearer than three-quarters of an inch. This confinement was continued twelve days, when suppuration being freely established, the seton was removed, together with bandages, splint, &c. On account of the soreness of the leg the dog made no efforts to use it.

November 21st.—A perfect cure has taken place. The dog uses each leg with facility and indiscriminately. The tendon is uniformly enlarged, (as in the case of Lang,) from the muscle to the os calcis. The dog was killed this evening.

Dissection.—The tendon, which was reunited, extends uniformly from its origin to its insertion, no enlargements or depressions being perceptible, where the ends of the old tendon were united to the ends of the newly-formed substance. The whole cord was rounder, and harder, than its fellow, not so flexible, and not possessing that beautiful pearly lustre, so conspicuous in a healthy tendon. Its interior was not examined.

For the purpose of showing the situation of parts, at the time the seton was employed in the above case, the following experiment was instituted.

Experiment 2d.—December 27th.—A very careful division of a portion of the tendo-achilles of a dog, was made, by using the point of an instrument, similar to a couching needle, prepared for the purpose. The tendon was then ruptured as in the preceding case. The dog was turned loose, and not again attended to until the 25th of January, 1827, when he was killed.

Dissection.—No traces of inflammation were perceptible. The absorbents had rounded the ends of the tendon, which were separated two inches from each other. The cellular substance and integuments gave no evidence of present or preceding disease. No evidences were here exhibited of that slow process instituted by nature, of which some authors have spoken.

These cases corroborate, in a striking manner, the great utility of the seton, in cases where other means prove abortive. We are also led to believe, that the injunction of absolute rest, on our patient, so strenuously insisted on by writers, is not so essential as is generally imagined. May not the motion in the part co-operate in producing the requisite degree of inflammation? Induce this but to rise to a height sufficient to cause the effusion of coagulable lymph, and the patient will, for his own comfort, keep the parts sufficiently still. We are also induced to conclude, that when suppuration is fully established, the seton has effected the purpose for which it had been employed, and may therefore then be removed.

The surgeons of antiquity treated ruptures and divisions of the tendons, by sowing their ends together. This practice, we are informed, was in general eminently successful; but occasionally, it produced the most lamentable consequences. At this we are not at all surprised, when we consider that, among the ancients, tendons were identified with nerves, and that the latter might have been subjected to rude and improper treatment. The suture, when properly applied, as it implicates only the integuments, cellular substance, and tendon, is now known to produce no such unpleasant effects.

The suture may act beneficially in two ways. First, by keeping the parts in contact, and inducing the requisite degree of inflammation, it may cause the effusion of coagulating lymph, and an union by the first intention. Secondly, should not the extremities of the tendon remain in the position most favourable for a cure as above directed, but be separated, by any undue action of the muscles, causing the extrication of the ligature, this would then be situated in all respects as a seton, and be productive of its peculiar advantages. As experiments on these points promised much interest and usefulness, I determined to devote some attention to them. Dr. William E. Horner also, whose name is often associated with minute research and ardent investigation, being interested in the farther development of this subject, accompanied me to a place in the suburbs of the city, where some sheep had been procured for the occasion. On reference to my notes, I find two cases thus detailed.

Experiment 3*d.*—Nov. 28th, 1826.—A large, round, silk ligature, twelve or eighteen inches long, was passed through the eye of a baling needle to its middle. Thus doubled, the ligature was carried through the integuments and the axis of the tendo-achilles of a sheep, about one and a half or two inches above the os calcis. Above this point one and a half inches, the double ligature was again brought through the integuments and tendon. Midway, between these two points, an instrument, making a very small wound through the skin, was introduced, and the tendon divided. Next the extremities of the tendon were easily approximated, and the ligatures made fast by a knot. As soon as the sheep was released, it made efforts to run, and the tendon giving way, the ankle was thrown backwards, so as to bring the heel to the ground. No examination was at the time made, to ascertain whether the tendon had torn itself from the ligatures.

December 1st.—The extremities of the tendon are separated one and a quarter or one and a half inches from each other, and the upper one is evidently free from the ligature. Incipient inflammation is perceptible. The sheep is observed yet to exert the injured leg, and at each effort the proper relative position of the parts is destroyed, by the retraction of the upper end of the tendon.

December 5th.—The inflammation has induced a slight discharge of pus from the upper wound. The ends of the tendon enlarged and globular. The intermediate space is filled with an uneven, round, indurated substance, connected intimately to the integuments.

December 15th.—The indurated mass in the intervening space, is not so large as at the last day. Suppuration is freely established. The seton, (for so the ligature may be called in this case,) was removed. By means of the roller and a padded splint, on the anterior of the leg and foot, the ends of the tendon were retained as nearly as possible in a proper position.

December 19th.—No material alteration, the dressings are continued.

December 23d.—The intumescence has much subsided since the last notice—treatment continued.

December 30th.—The sheep was again examined. The wounds had not discharged pus for several days, and their orifices had scabbed. The ends of the tendon still distinguishable; the lower one very distinctly, it being much tumefied. They were separated nearly two inches, and in the intermediate space a dense uneven cord was substituted. The sheep was killed.

Dissection.—The integuments adhered to the posterior face of the newly-formed substance, and particularly where the ligature had passed through. These being removed, a vertical section of the tendon was next made from behind forwards. By this means a very fine view of the internal structure of the parts was obtained. A dense white cord, neither resplendent, nor distinctly fibrous longitudinally, but decussating in every direction, was formed, four or five lines in diameter. This was connected above, to the tendon, sheath, and cellular parts, and extended uniformly downwards, to the place where it approached the end of the old tendon below, there it turned off all around, to be agglutinated to the tendon and envelope. Thus the lower extremity of the old tendon extended three-fourths of an inch upwards, enclosed as if by a sack, which was filled with sanious blood. From experiment 1st, and other observations, I am induced to believe, that the absorbents would in a short time have removed the sanious matter above spoken of, and that the tendon would have been rendered in time, a continuous dense cord. The regenerated portion, at the upper end, was found adhering intimately with the old tendon, many of the extremities of whose minute fibres, had been absorbed, and a few, left loose and changed in colour.

Experiment 4th.—Nov. 28th, 1826.—In a manner similar to that detailed in the last experiment, a narrow tape ligature doubled, was carried through the tendo-achilles of a sheep, at two points, the intermediate tendon divided, the ends approximated, and secured by a knot. This sheep made no efforts to use the wounded leg, but laid down quietly.

December 1st.—The ligature retains the extremities of the tendon in contact. The parts are considerably inflamed. The sheep lies peaceably.

December 5th.—All things appear very favourable. There is a continuous, indurated, irregular, cylindrical substance, extending from a short distance above the os calcis, nearly to the muscles. This had greatly increased in density, since the last notice. A very slight discharge of pus was observed on moving the ligature, which was divided and removed.

December 15th.—In consequence of the removal of the ligature, the attendant inflammation is much reduced. The ends of the tendon, by slight enlargements, nearly in contact.

December 19th.—The appearances are more favourable than could have been anticipated. The ends are now scarcely perceptible; being merged in the indurated sheath and adjacent parts. The sheep, for the first time is seen to use his leg in walking.

December 23d.—The tumefaction of the extremities of the tendon, together with the newly-formed substance, when felt through the integuments, gave more the sensation of a cartilaginous body than of coagulated lymph. It was in most respects analogous to the tendon in the leg of Lang, two weeks after the removal of the seton. The sheep was killed, and the leg and part of the pelvis removed.

Dissection.—I injected a fine size, coloured with vermilion, into the femoral artery, for the purpose of displaying its vascularity. The cutis was very readily removed, except at its posterior part, where it was implicated in the reunion. All the parts intervening between, and contiguous to the ends of the tendon, were very vascular. But this great degree of vascularity did not extend into the extremity of the old tendon;

their retracted ends did not adhere to the restored portion or new substance immediately at their extremities, but laterally a short distance from them. These lateral adhesions at the upper end, could be with little difficulty separated by dissection from the old tendon, and the difference in vascularity distinctly displayed. By an accurate admeasurement, I ascertained that the tendo-achilles on the side affected, was one-fourth of an inch longer than that of the opposite side.

It will now be readily perceived, that in the one case, (experiment 4th,) sewing the tendons together, kept the parts in apposition, raised the inflammation, and induced a direct union. That in the other, (experiment 3d,) after the first object was defeated, by the inordinate action of the animal, the ligature acted, to all intents and purposes, the part of a seton, and a reunion was accomplished by the second intention.

Another mode of treating ruptured tendons, of more modern date, is that recommended and detailed, with little variation, by MONRO, ALLAN, SCHNEIDER, PETIT, &c. The treatment consists in the employment of bandages, splints, absolute rest, cold applications, purging, venesection, and low diet. The following experiment was tried for the purpose of illustrating this course of practice.

Experiment 5th.—Nov. 21st, 1826.—By means of a suitable apparatus I confined a dog on his back, and with a very delicate instrument divided the tendo-achilles. From a wound of some small adjacent vessel, a considerable quantity of blood was poured into the cavity of the incision. The orifice in the integuments being very small, the blood accumulated, and became partially diffused. I enlarged the wound, pressed out the blood, coaptated the extremities, and rolled a bandage tightly from the foot to above the knee. The foot was extended, and the ankle kept nearly straight, by the aid of a splint on the anterior of the leg and foot. The leg was then flexed on the thigh, the thigh on the abdomen, and the dog thus firmly fixed. At the expiration of five days, the parts were examined, and all things appearing as anticipated, the dog was restored to his original confinement. Six days after the above notice, the dog was permitted, by the inadvertence of the attendant, to tear off all the dressings and run loose in the yard.

At the expiration of twenty days from the commencement of the experiment, I examined and found, that the extremities of the tendon had separated about an inch, and a cord might be distinctly felt and rolled under the finger, connecting the two ends. The dog was still permitted to run at liberty. Meat, rich soups, and other highly nutritious and stimulant articles had been given ad libitum since the commencement of the experiment.

January 15th, 1827.—The dog has for a short time, been using the affected leg a little in walking. He was killed for examination.

Dissection.—I threw into the aorta a fine coloured injection, for the purpose of ascertaining the comparative vascularity of the two tendons, but it did not succeed satisfactorily. The integuments being removed, a vertical section was then made through the middle of the tendon, as in the former case. The newly-formed connecting cord was about three lines in diameter. Its structure was similar in most respects to those already described, but at the ends it united more intimately with the old tendon, than in the former cases. The parts ran into each other almost imperceptibly; here and there a few fibres of the old tendon were distinguishable, lying loose, and of a dull yellowish colour.

The following case tends to show what would be the result, under the most favourable circumstances, when the process was entrusted wholly to nature.

Experiment 6th.—Dec. 23d, 1826.—A puppy, nearly two months old, was held steadily, and its tendo-achilles carefully divided, about three-fourths of an inch above its insertion. He was then turned loose in the yard.

January 14th, 1827.—The puppy was killed to-day, and upon examination I found very little if any signs of an attempt at a reunion. The upper end of the tendon had partially involved the contiguous parts by adhesions; but no trace of a dense, indurated substance, was perceptible among the cellular parts, lying between the extremities of the tendon. The lower end of the divided tendon had contracted but few adhesions. The extreme end or point exhibited no vessels ramifying through it, while all other neighbouring parts, evinced a high degree of vascularity.

A puppy was used in the foregoing experiment, in preference to a dog of full size, because it was presumed, that the powers of nature being more energetic here, in the reparation of injury, would effect a reunion, if such a thing were possible. Had this case been treated as the one previous, there can be but little doubt, but a reunion might have been accomplished with much greater facility. This experiment then, contrasted with the previous one, will show how important it is to use bandages and splints, even for a few days, in the first stage of such accidents.

The tendo-achilles was preferred for experiments, illustrative of the wounds and cure of tendons generally, on account of its being more isolated and unconnected with other structures; thereby rendering the observations and facts resulting less complicated and equivocal.

I shall attempt, in a cursory manner, to point out some inferences, which I conceive to be clearly deducible from the foregoing experiments.

In the first place. When a tendon is divided, either by rupture or incision, it may be generally, by proper treatment, restored to its appropriate functions.

To this position, there are evidently some exceptions. When, at the time division takes place, there also occurs extensive laceration or contusion of the adjacent parts, it may not be possible to induce reunion, and if accomplished, adhesions may be contracted, so as to limit or completely restrain motion. In this manner, the tendons which pass over the wrist, when divided, or extensively injured, are liable to become amalgamated in one confused mass, adhering to the annular ligament and other immovable parts. If tendons which are bound down by sheaths adhering immediately to bones, or which pass through trochleæ, be divided or extensively diseased, adhesions to the envelopes must take place, and restrain the proper action of the muscles. How far the evils above detailed may be obviated, by carefully separating the tendons from other parts, and keeping up motion during the cure, will furnish a subject for future investigation.

In the next place, the time required for a reunion by the first intention, may be stated at from ten to twelve or fifteen days, and by the second intention, from three to four weeks. The time when dogs, sheep, &c. commence using their reunited tendon, must be much earlier than in man, the former having three sound legs left to bear the weight of the body; in the latter when the sound leg is raised, the whole superincumbent load must be thrown on the injured side. Writers generally suppose that in cases where division has existed for a long time, nature institutes a slow process by which the functions of the parts are restored. They recommend by way of aiding her, the most rigid adherence to the antiphlogistic regimen. A course diametrically opposed to that pointed out by reason, as will be fully shown, when we come to investigate the processes by which reunion is accomplished. At all events, it is now no longer necessary to subject a patient to absolute rest and low diet for fifteen or twenty months, for the purpose of inducing a cure of an important tendon, when it may be done in as many days. A cure by means of the seton, in these chronic cases requires about the same time as if suppuration had been induced in the first instance, (see experiment 1st,) it may, I think, be also deduced from the experiments, that when suppuration is fully established, the seton may be removed. If after this a sufficient time should elapse, and no permanent benefit be apparent, I would not hesitate again to introduce the seton.

The next object worthy of attention is the process by which reunion is produced. The sheathe of the tendon and the cellular substance in the vicinity, assume the inflammatory action with much more facility than the tendon itself. They therefore arrive at a height of action, adequate to the effusion of lymph sooner than the extremities of the tendon, and consequently furnish the first bond of union. Into this lymph, vessels shoot from all the adjacent parts capable of affording them, and it soon becomes an organized mass. The ends of the tendon are so slow in developing their vessels, that they are not able to furnish their quota to the coagulated lymph, and are therefore not permitted to connect themselves with the newly-formed substance. The ends of the tendon were found in several of the experiments, loose, changed in colour, and surrounded by a dark sanious fluid, while the newly-formed medium of connection, was attached a short distance from the end to the tendon laterally. If the envelopes of an artery be too much disturbed, and the vasa vasorum injured, the artery dies, to where they are furnished in sufficient quantities for its health in the same way, if the sheathe of the tendon, furnishing the vessels essential to its vitality, be disturbed by rupture or other means it must die. In process of time these dead ends of the tendon, sanious blood, &c. are removed by the absorbents, and the whole cord becomes a continuous line, of nearly the same diameter from the muscles to its insertion. The primary inflammation, seldom or never surpasses the adhesive point, unless the neighbouring parts are also much injured. From a want of vascularity in the parts in a natural state, we have here a low grade of inflammation, not to be restrained by purging, rest, low diet, &c. as recommended by most authors, but which requires the opposite course of treatment. May not the tediousness of cure following these accidents be attributable in a great measure to this mistake in practice? When, in such cases, full, generous diet, bandages, splints, &c. fail in producing a reunion; then the seton of Dr. Physick, may be resorted to, with the utmost confidence. The principle of its action has been already so fully detailed, that any thing more would be but useless repetition.

The principles here laid down, must, when applied to man, be subject to modifications and restrictions, dependent on their being deduced from experiments on a lower order of animals. Yet we may safely conclude that much of the practice in these cases has been vague and irrational, that neither the suture of GUY DE CHAULIAC, and AMBROSE PARE, the slipper and calf-piece of MONRO, the splint on the front of the leg of SCHNEIDER, nor any other apparatus or treatment, can be applicable to all cases and all stages in a rupture of the tendo-achilles. In consulting authors, we often find, as in the present instance, *one* remedy or apparatus for *one* disease or injury, and that *one* must be applied to all the proteian forms of the other. In this way, reason and philosophy are too often banished from our investigations, and we sink to a level with quacks and empirics. Inflammation in its various stages modified by the tissue in which it is situated, presents in these accidents the clue to guide us.

Art. X. *Observations on the medical properties and effects of the common Charcoal, carbo ligni.* Read before the Medical Society of Pittsburg. By Dr. D. S. Stevenson, of Canonsburg, and requested to be published by a unanimous vote of the Society. Nov. 7th, 1826.

Perhaps there is no substance in nature with which persons of every age and condition of life are more familiarized, and whose extensively useful properties in other arts as well as in the medical profession, have been more unnoticed and unknown than the carbon or charcoal of wood.

Leaving the general consideration of the valuable properties of this article for other purposes, its importance as an article of materia medica, renders it highly interesting to the medical practitioner. From my own experience with the article, I am induced to believe, that, in the progress of medical investigation and observation, it will ere long occupy a conspicuous place in the list of medicinal agents.

Charcoal, as a medicine, has been used for a considerable time in the treatment of some diseases, and especially, as an antiseptic it has held the highest station for a long time; indeed, I think its being formerly viewed and applied, merely as an antiseptic, and its effects on the human system, having never been physiologically investigated till lately, have been the causes why the medical use of charcoal has been hitherto so limited. Thus, by a blind adherence to a restrictive classification of medicines, such as tonics, astringents, antiseptics, &c. many of their properties, have for a long time been unknown, which afterwards became either accidentally or otherwise discovered, and thus converted to more extensive benefit in the treatment of other diseases. This fact has been verified in the history of some of our most useful medicines. But in the experiments and observations which I have made on charcoal, I have no pretension to originality, except possibly, in treating diseases of the liver by the use of this article. My only wish is, that my observations on the remedy, may be a means of directing the attention of others to the examination of its medical properties and effects; and I hope, that others of greater ability and experience, may unfold its real character and establish with precision, its use in the treatment of the various diseases to which it may be found applicable.

I was first induced to use charcoal as a medicine in several cases of disease, from the recommendation of Professor CHAPMAN, in his observations on this article, both as a cathartic and tonic, in his Therapeutics and Materia Medica. In speaking of charcoal as a cathartic, he thus concludes: "Certain I am, that it is a substance of much more extensive utility, and may hereafter become an important accession to the materia medica." It must be gratifying to this distinguished author, that the prognostic, which his discernment has made in regard to this article is now substantially verified. Having experienced the cathartic effects of charcoal in several cases, about two years ago, whilst residing in the state of Ohio, and especially, after trying its effect in the case of a dyspeptic patient, the odour of whose breath, was exceedingly offensive in consequence of the disorder of his digestive organs; the relief obtained by its use in this case, and its efficacy as a cathartic, inspired me with confidence in the propriety of a more extensive application of it. I there had an opportunity of trying its curative powers in the treatment of intermittent and remittent fever. In chronic and stubborn cases of intermittent, and especially, in cases complicated with dysentery or diarrhœa, from great derangement of the biliary apparatus and an atonic state of the bowels, I found the charcoal united with Peruvian bark in suitable proportions, a substitute for the alkaline and mercurial preparations commonly used in such cases, and afforded a speedy and permanent relief. Combined with Columbo or the cinchona in equal quantities, with the addition of calomel, camphor, (and opium, if required,) in the form of a tonic powder, I have found this article of the most essential benefit in several cases of remittent bilious fever of a typhoid tendency. In the mean time I have had frequent opportunities of making trial of this medicine in diarrhœa and dysentery. In protracted cases of either of those diseases, attended with a disordered state of the liver, and a debilitated state of the stomach, I can give my decided testimony in favour of charcoal, in preference to any medicine I have ever used in such cases. Indeed, in any stage of diarrhœa or dysentery, it is an excellent cathartic, when its use is thus indicated. In chronic cases of the above diseases, or in cases of lientery, the charcoal appears to operate in the threefold capacity of a tonic, astringent and absorbent, if administered in small portions, frequently repeated, whilst at the same time it has a salutary influence on the biliary fluid. To its absorbent property, in connexion with the carbonic acid which it contains, must, no doubt, be ascribed the well known power of charcoal in removing odours from different substances, as well as the foul odour of the stools in dysentery and other bowel complaints.

During the last eight months, I have used this article in several cases of hepatitis, only two of which I shall now state; and also, in a few cases of old ulcerations, in which I used it both internally and externally. The first of these was the case of a man, aged about forty-eight years, whose lungs had become diseased in consequence of a hepatic affection, with which he had been afflicted for two years previously. I was first called to this patient on account of an attack of hæmoptisis. The hæmorrhage from the lungs was inordinately great, but was soon arrested by the usual means. I found the pulmonary system in a state of great inflammatory excitement and irritation, and constantly exposed to a return of hæmorrhage from the tendency to accumulation of blood in that system. By persevering in such means as were calculated to subdue the excitement, remove the irritation, prevent the inordinate accumulation of blood in the lungs and equalize the circulation, hæmorrhage was afterwards prevented, except one slight attack. I ascertained from the history of the case, from the pain in the region of the liver, extending to the right lobe of the lungs, and from the discharge of blood and matter proceeding from that lobe, that the liver was the primary seat of the disease, and in its progress it had involved the contents of the right side of the chest. For some time after the hæmorrhage, he expectorated large quantities of bilio-purulent matter, an evidence that the liver and lungs were both concerned in the common disease. At this time the general strength of the patient was greatly prostrated, and the little remainder was gradually wasting by the hectic fever, I now directed my treatment to the liver. The blue mercurial pill with such tonics as I thought were best adapted to his case, chiefly the mineral acids, were used for a considerable time without any apparent good effect, except that these means appeared to keep the disease in check, and he remained pretty stationary. Hope now left the patient, and every one who saw him. I requested him to try the finely pulverized charcoal in the dose of a tea-spoonful in a little new milk, morning and evening, increasing the quantity according to its action on the bowels. He pursued this plan without varying the dose for about three weeks, when, to the astonishment of all who knew him, he was able to ride on horseback, a distance of four miles. He had not used the charcoal more than three days, till the bilious derangement was corrected, the nauseating foulness of his breath removed, his appetite improved, and the whole system appeared to assume new energy. The expectoration gradually diminished, and the hectic symptoms disappeared in a short time. In one month the increase of his flesh was very remarkable. He still continues to use the charcoal occasionally, in order to keep his bowels regular. He is now more fleshy than he ever was, and although, still tender, his lungs are somewhat irritable, and he is sometimes troubled with cough.

A young lady asked my counsel in her case about five months ago. Her illness was induced by assiduous employment for a considerable time in the laborious business of teaching a female school, by which her whole system was much debilitated. Appetite bad, bowels irregular, dull pain in the right side, tongue coated, considerable febrile excitement, a troublèsome cough, and irregularity of the catamenia. She was bled, took an emetic, which was followed by a cathartic of calomel, and from these means obtained for the time considerable relief. To remove the obstructed and disordered condition of the liver and correct the defective state of the bile, I prescribed an alterative course of mercury in conjunction with tonics and alkaline medicines. An expectorant preparation was given for the relief of the cough. This course was pursued for some time without producing the good effect which I had expected. Her general debility continued, and some hectic symptoms began to be manifested; and, although the biliary derangement was considerably removed, yet fears were now entertained that her lungs were seriously affected. I now advised her to lay aside every thing else, and begin the use of charcoal in the manner before mentioned. She at first took it in the dose of a tea-spoonful in new milk once daily, and gradually increased the number of doses to three daily. She took it in milk, water, or wine and water, as was most convenient or agreeable. By its use she shortly found a comfortable change in her general health. Appetite and digestion improved, cough somewhat abated, strength increased, free from pain, and the menstrual discharge natural. In six weeks from the commencement of the charcoal, her hepatic disease was removed, and she was nearly restored to her usual health; but through the influence of a bad cold, her pulmonary affection has since returned, from which her recovery is at present doubtful. It may be observed that, in both the above cases, no other medicine was used after the commencement of the charcoal. Had it been used with the mercurial medicines, I have no doubt it would have co-operated well, as I have experienced this fact in other cases. And, although charcoal was the only article that appeared to give sensible relief in the above cases, yet the previous means used, especially the mercurial medicines, certainly deserve part of the credit.

From these and other instances of my experience, I am convinced that charcoal is peculiarly well adapted to the relief of hepatico-pulmonary affections. I have succeeded in effecting a cure in two remarkably inveterate cases of sore legs, and one of a sore arm, by the use of this article, both externally and internally.

The first had existed many years, during which a great variety of means had been used without avail; and, indeed, the case was considered incurable. The ulceration was about the size of a dollar, seated a little above the inner ankle; all the adjacent parts were very livid, and it was truly a filthy, loathsome sore. This ulcer was the sequel of an erysipelatous affection, which had concentrated in that leg and ankle. I advised to have the ulcer and parts adjacent washed once daily with suds of Castile soap, the ulcer to be filled with very finely pulverized charcoal, a pledget of lint or linen spread with simple cerate applied on it, and a bandage over all, of sufficient length to envelop the ankle and leg, applied comfortably tight and constantly worn. I also directed him to take as much charcoal as would act moderately on his bowels. Pursuing this plan, in three weeks the leg was perfectly healed. He continued to use the charcoal inwardly for some time afterwards. It is now six months since this leg was cured, and no sign of disease has since appeared.

In the other case, the running sore was the consequence of a compound fracture of the leg, which had happened fifteen years ago. The case was similar to the above in regard to the effects of the treatment that had been pursued; the ulcerated surface larger, more spongy, situated over the inside of the tibia, great varicose enlargement of the veins, and the leg much swollen. The same plan of treatment as in the above case has been pursued. The leg now presents a comparatively natural appearance, and the ulcerated part is almost entirely healed. It is but a month since this came under my direction.

About four months ago, a boy, aged about fifteen years, was put under my care for the treatment of a scrofulous ulceration of the fore-arm. The affection at first, I understood, was a very painful inflammatory swelling, and called inflammatory rheumatism by a neighbour of mine, who practises medicine, under whose treatment it had been for about two years without any good effect, and the case was given up by him. When I first saw the case, I considered it to be scrofulous from the nature of the discharge and the appearance of the ulcer, although I could not, from the history of the case, tell precisely of what form the disease had been at first. The radial bone was involved in the disease, small portions of which had been discharged at different times. The bandage, charcoal, &c. were applied in this case in the same manner as in the cases abovementioned; and in conjunction with this local treatment, the patient took as an alterative medicine, for about a month, the compound decoction of guaiacum wood, with the addition of the muriate of mercury. The cure was completed in two months, and the boy has for some time had the perfect use of his arm. The cure of this case I ascribe, in good part, to the agency of the alterative medicine which was used in connection with the charcoal. I have stated the treatment of the above cases, not because it is new, but because these cases furnish additional testimony in favour of the power of charcoal in curing foul, ill-conditioned, and inveterate ulcers, of various kinds. I have also lately succeeded by the use of this article in removing an insuperable propensity to eat clay, in the case of a very respectable lady, aged about forty-five years. She took the charcoal in its dry state, (finely powdered,) in small portions frequently repeated, and in a short time it removed that derangement of the stomach which produced the unnatural desire for clay.

From these observations I would infer, that charcoal is well calculated to correct many disorders of the digestive system;

and from its influence on the functions of the biliary and chylopoietic viscera, it certainly is well adapted to the treatment of many other morbid derangements of the constitution, and may hence, with some propriety, I think, be called one of our constitutional remedies.

In the treatment of some of the diseases of children, especially cholera infantum, this medicine, in the experience of some very respectable physicians, has been found to be peculiarly beneficial; and, indeed, in acidity of the stomach and common derangements of the alimentary canal, and also in tabes mesenterica, I think charcoal might be very serviceable.

The effect of charcoal in producing obesity or increasing the volume of muscular and adipose substance, is a subject worthy the inquiry of the physiologist. The first case which I have mentioned was a remarkable instance of this; and I have also observed this fact in the case of other animals. An intelligent farmer informed me that for several years he had been in the practice of giving charcoal to some of his domestic animals, especially hogs, which he said caused them to fatten more speedily, and less grain was required. Is this owing to a real addition of carbon being communicated to the living solids by this substance?

I think it is immaterial from what kind of wood charcoal is prepared for medical use, but I have mostly used that which was prepared from green hickory or maple wood. The activity of charcoal may be much increased by putting it in a crucible or any suitable close vessel, and placing it in a strong heat for some time. When prepared in this way, the portion required, when used internally, is much less, which is very desirable in many cases. It should always be very finely pulverized and kept secluded from the air. The size and frequency of the dose should be regulated according to the indications of the case, from a tea-spoonful to a table-spoonful twice or thrice daily.

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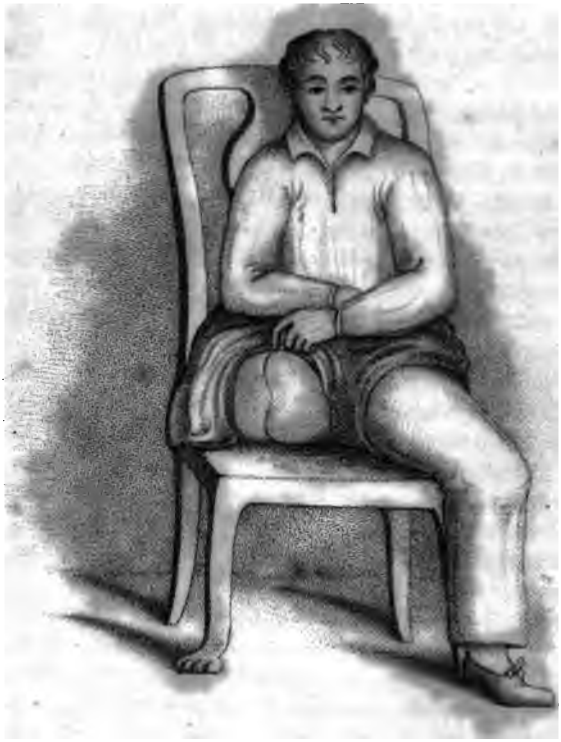
Pa. [illegible].



MOTT'S amputation at the hip joint.

Appearance of the Stump when perfectly healed.

Drawn by J. Bell M.D. of N.Y. J. Drayton Sc.

ART. XI. *Successful Amputation at the Hip-joint.* By VALENTINE MOTT, M. D. Professor of Surgery in Rutgers Medical College, New York. [With a Plate.]

IT is now generally understood that surgical operations are not to be performed until all other curative measures have proved unavailing, or the life of the individual cannot be saved, unless some part be sacrificed for the preservation of the whole. We have, nevertheless, reason to rejoice, that under exceedingly unfavourable circumstances, these dreaded resources of our art afford a rational prospect of success, frequently enabling us to arrest or remove morbid affections, otherwise beyond reach of cure, and to prolong valuable lives in a state of comparative ease. Were we disposed to enter upon such an inquiry, it might be advantageous to determine how far the outcry against surgical operations, (doubtless just in numerous instances,) has proved detrimental to the interests of humanity, by causing the knife to be withheld in many cases where an intrepid and skilful employment of it would have been followed by the restoration of health, and the avoidance of the excruciating sufferings so often endured for a long time previous to the death of such patients. Without discussing this topic, however, we may be permitted to state our belief that a great number of persons are annually committed to the grave, because proper surgical measures are not enforced, and that these are as often withheld from timidity, prejudice, or ignorance, as from any valid objection.

Amputation at the hip-joint is an operation but seldom required, and always attended with great peril, both to the life of the patient and the reputation of the surgeon; but neither of these circumstances are sufficient to justify any one in asserting that this operation ought not to be performed, or that it may not in a majority of cases prove successful, if it be not too long deferred. The following case may prove serviceable to the profession, by showing that the operation may be advantageously attempted in a patient who would otherwise have speedily sunk under his disease. It is moreover interesting from the circumstance of its being the FIRST amputation at the hip-joint successfully performed in this country, as far as our present information extends.

George Byles, a healthy boy, ten years old, broke his thigh about two-thirds of its length from the hip-joint; two days after, splints and bandages were firmly, (and injudiciously) applied, which produced great distress, and were removed at the instigation of the boy. Physick's modification of Desault's splint was prepared by the physician then called in, who pointed out to the father, previous to its application, a projecting point on the outside of the thigh, which was the extremity of the superior fragment, which, by the improper pressure was nearly forced through the integuments. The bone being properly coaptated, the long splint was then applied.

About three weeks subsequent to this period another physician was called in, who recommended the employment of the inclined plane, which was adopted, the boards forming it having pegs at the side. The boy stated that during his confinement to this inclined plane for several weeks, he had in tossing restlessly about, injured the thigh on the inside just above the condyle, which produced a sinuous opening leading to the fractured bone. It is most probable however, that the sinus was formed and pointing, when it was struck against the peg and opened.

He was brought into the city of New York on the 7th of September, 1824, at which time we first saw him. His countenance was expressive of much anguish, with a white tongue and feeble pulse; his right limb was much enlarged on the outside, resembling a case of spina ventosa. To the touch it was hard and irregular, was exceedingly tender, and when pressed gave excruciating pain. The swelling extended to the great trochanter, gradually diminishing towards the top of the thigh. Opposite to the greatest enlargement was a sinus, discharging a thin sanious fluid, leading to the middle of the thigh bone, which was perfectly carious. During two weeks succeeding his arrival in the city, medicines were administered with a view of allaying irritation, and imparting tone to the system, but hectic and night sweats, notwithstanding, supervened. As ulcerations began to occur by the side of the tibia, and all the symptoms became worse, it was resolved to amputate at the hip-joint as the only chance of saving the life of the patient.

On the 7th of October, 1824, the patient, after having passed a comfortable night, was placed upon the table in order to be operated on. An incision was made over the femoral artery as it emerges from under the femoral arch, and the vessel secured by ligature. While feeling on the outside of the artery for the lesser trochanter, the pulsation of a vessel apparently but little smaller than the femoral artery immediately below the ligature, convinced us that in this case the profunda femoris was given off above the femoral arch, as we occasionally find it. This vessel was taken up.

Lisfranc's knife was then introduced between the artery and bone, and carried through close by the neck of the femur towards the tuber ischii, thus forming the inner flap. The external flap was formed by cutting from without inwards. The hæmorrhage from the veins and small arteries was considerable when the incisions were made, and numerous vessels were taken up: but comparatively little blood was lost during the operation, and the patient was put to bed shortly after it was completed. After the inner flap was cut, some of the surgical attendants examining the lesser trochanter, pronounced that the head of the bone was *not diseased.* In order to satisfy the doubts expressed, the bone was sawed through the lesser trochanter, when it was found to be of the consistence of cheese, being denuded of periosteum on the outerside up towards the joint, and requiring to be removed, which was afterwards done, as originally contemplated.

It is scarcely necessary for us to enter into the detail of symptoms and treatment subsequent to the operation, as nothing occurred worthy of note, except various degrees of irritation of the stomach and whole system, previous to the coming away of the ligatures. The treatment consisted in regulating the diet, and administering anodyne and tonic medicines according to circumstances.

On the 15th of October, eight days from the operation, two-thirds of the stump was healed by the first intention. Between the 17th and 31st of October, all the ligatures, seventeen in number, were removed; and by the 20th of November the whole stump was effectually healed, and the boy had become fat and lusty. There can be no doubt but that this limb might have been saved without difficulty, had the proper treatment been instituted when the accident occurred. When it came under our charge, nothing short of the operation above related, could have saved this boy's life.

The appearance of the stump after the entire recovery of the patient, is very accurately represented in the engraving sketch-ed by my friend, Dr. Bell, of New York; to Dr. Frederick King, I am indebted for accurate notes of the progress of this case, which was under his especial care after the operation.

No. 25 Park Place.

Art. XII. *Case of Compound Dislocation of the Astragalus, with some Observations on the constitutional disturbance and treatment of these and other cases of severe local injuries.* By Stephens R. Beatty, M. D. of Clear Spring, Washington county, Md.

Mr. JOHN BESLEY, a robust and corpulent farmer, of strong constitution, aged thirty-eight, and weighing 230 lbs. was, on the 20th of April, 1826, thrown from a *Carryall*, his horse being in full speed; he alighted on the turnpike, on his right foot; being laid on a mattress in a few minutes after, his boot and stocking were immediately cut off: the astragalus was found to be dislocated outwards from the os naviculare and os calcis, the laceration of the integuments extending from the middle of the base of the tibia, round the instep, to about an inch and a half below the external malleolus, being four inches in length; the navicular articulating surface of the astragalus, likewise that for the os calcis projecting through the wound, and the foot turned inwards upon the internal malleolus. The anterior tibial artery escaped laceration. The boot prevented the injury from being greater, and saved the astragalus from the dust and gravel of the turnpike.

A loose scale of the astragalus was first removed by the fingers; counter-extension and extension being then made by two assistants, the reduction was accomplished without any difficulty, the integuments brought together by three stitches, the wound covered with lint, and two splints applied with a roller round the leg, and the many-tailed bandage in separate pieces round the ankle and instep; the edge of the outer splint near the wound was so shaped as to leave it free.

A few hours after the operation, had a severe rigor from the excessive pain. In the evening, pulse being full, strong and frequent, skin hot and dry, venesection fifty-five ounces before the pulse was affected.

April 21st.—Had a restless night, having only slept an hour or two. Took infusion of senna this morning, which produced three evacuations; internal splint removed, and another applied, having a foot-piece set rather obliquely on it to support the foot, being long enough to prevent the bed-clothes from pressing on the toes. Ordered vegetable diet, and that diluted spirits of wine be applied frequently to the leg and foot as a refrigerant. In the evening, pulse moderate and fever light. Slept several times during the day. Can raise his leg and move it about without assistance or suffering any pain.

22d.—Rested better than the night previous, but had severe pain in the instep and a head-ache. Passed the day pretty comfortably, having no fever in the early part. Had no alvine evacuation to-day. Towards evening, pulse becoming too active, skin hot and dry, and having some head-ache, twenty-eight ounces of blood were extracted.

23d.—Foot very painful this morning. Simple cerate applied, and clean bandages round the instep. Infusion of senna morning and evening, neither dose operated; having had no alvine evacuation for two days, is become very restless, leg and head painful: ℥iss of castor oil were given, which, together with the senna, operating three times, produced almost entire relief. The foregoing shows the importance of keeping the bowels very open, which is objected to by Sir Astley Cooper, on account of its disturbing the limb, but this patient gets on the chair without any difficulty or pain. Tinctura opii gtt. 60 at bed time.

24th.—Rested well during the night, and slept a little in the morning, but towards evening his pulse being one hundred, head and injured part painful, venesection forty-eight ounces, blood very buffy for the first time. Spiritus ætheris nitrosi given as a refrigerant, and diluted spirits of wine continued—at bed time, tinctura opii gtt. 80.

25th.—Slept the forepart of the night. Infusion of senna and manna this morning, which operated two or three times. Instep very painful. Dressed with simple cerate. Is suppurating moderately. Laudanum gtt. 100: it was necessary to repeat 50 more an hour after, which caused him to rest the greater part of the night.

26th.—More tranquil this morning and during the day, than since the injury. In the evening, pulse being strong, thirty-two ounces of buffy blood were extracted. Laudanum gtt. 120, and poultice to the wound, the outer splint being removed.

27th.—Sulphate of magnesia. Adhesive straps applied to prevent the wound gaping, the stitches now becoming loose. Laudanum gtt. 150, at night.

28th.—Has rested well during the day for several days, but every evening there is an accession of fever, and the foot becomes very painful. Venesection twenty-four ounces, blood still buffy. At night laudanum gtt. 150: this medicine procures pretty good rest.

30th.—Was removed home to-day, about twenty miles, part of the way on a litter, carried by men, and the remainder in a covered keel-boat on the Potomac. As the day was very warm, and the boat rocked much, he suffered considerable pain and fatigue.

From this time he was under the care of my brother, of Hancock, by whom the journal was continued.

May 2d.—His pulse being very much excited to-day, twenty-three ounces of blood were taken. From this date the wound continued healing rapidly, under dressings of basilicon twice a day, and the use of laudanum every night, which was absolutely necessary, and about every third day Epsom salts or castor oil to keep the bowels open.

15th.—An unpleasant smell, and skin black about the wound. A poultice of Peruvian bark was applied for a day or two, after which the appearance of the wound was quite healthy. Dressing with basilicon and the use of laudanum continued to the amount of two or three hundred drops per day; about this time there was occasional severe twitching in the ankle, which required this excessive use of laudanum; after a few days the twitching ceased.

24th.—Visited him the last time. Wound entirely healed. Recommended pouring cold water on the ankle frequently, which he afterwards said was of great benefit.

29th.—Walked on crutches and rode on horseback, being able to bear weight enough on his foot to mount a horse.

July 1st.—Can walk without crutches, by the help of a cane.

25th.—A small piece of bone discharged by suppuration.

October 11th.—I saw Mr. Besley to-day, and was pleased to see him walk nearly as well as before the injury; the motion of the astragalus on the tibia appears to be as free as before the accident, but a little stiffness yet remaining about the instep causes a slight halt in his walk.

Observations.—Although amputation is now seldom thought of by surgeons, in cases of compound dislocations, unless there be very considerable local injury, such as extremely shattered bones, extensive laceration of integuments, the accident happening to a person of very irritable constitution, &c.; yet, it will be admitted by all, that in attempting to save the limb, the life of the patient is in some danger. It is therefore important that a correct practice be established in these severe cases. As the treatment pursued in the above one differs materially from that recommended by surgeons of the present day of the highest authority, one of the most respectable of whom is Sir ASTLEY COOPER, and as the cure has been rapid in comparison with cases differently treated, I have been induced to publish it.

The difference consists in the extent to which I pursued the antiphlogistic treatment at the commencement of, and during the inflammatory fever, in opposition to the opinion of Mr. Cooper; who says, "*Bloodletting must be had recourse to or not, according to the powers of the constitution,* as it is necessary to bear in mind that the patient has a great trial of his powers to undergo, and will require throughout the process of restoration, all the support which his strength can receive. *Purgatives must also be used with the utmost caution,* for there cannot be a worse practice, when a limb is placed in a good position, and adhesion is proceeding, than to disturb the processes of nature by the frequent changes of position which purges produce; and I am quite sure that in cases of compound fracture, I have seen patients destroyed by their frequent administration. *That which is to be done by bleeding and emptying the bowels, should be effected within an hour or two after the accident,* before the adhesive inflammation arises; after which the liquor ammoniæ acetatis and tinctura opii, form the patient's best medicine, with a slight aperient at intervals."*

It is a maxim with many, but a very incorrect and dangerous one, to withhold active depletion in the commencement of fever, that the powers of the patient may be preserved to enable him to support the last stage; but the best way to support the strength in the advanced stages, and to prevent fatal derangements in the structure and functions of the internal vital organs, is to cut short or reduce by active remedies the excitement of the first. It is only in this stage that we can employ these remedies; for, if they were continued in the stage of collapse, the system would immediately sink under them. The most successful practice in acute diseases, is to make a decided impression on them at the commencement by powerful measures, and to treat them by mild ones towards the close.

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* Cooper and Travers, Surgical Essays, Vol. I. p. 306, first edit. Philadelphia.

Mr. JOSEPH SWAN, in his late essay on tetanus, has proved, by dissections of animals upon whom he had previously inflicted some severe local injury, and of persons who had died of similar injuries, that after every accident in which the constitution sympathises with the injured part, the ganglia of the grand sympathetic nerve, and the parts to which it is distributed, particularly the stomach and intestines, become irritated and inflamed. In the opinion of Mr. Swan, when this inflammation extends from the sympathetic through the cerebral and spinal nerves to the medulla spinalis, tetanus is produced, a disease frequently the consequence of compound dislocations. "These experiments confirm a fact but too often neglected by medical men, viz. that after accidents in which the system sympathises, internal and important organs, especially the stomach and bowels, become the seat of serious disease; and that consequently the physician should endeavour to remove this secondary affection, often more dangerous than the primary one."*

The local injury in these cases is the exciting cause of the fever, and the internal inflammation a consequence of the increased action of the heart and arteries; the indications of treatment are therefore very plain, viz. to diminish the irritation and inflammation of the injured part as much as possible by local applications, and to keep under subjection by general remedies the inflammatory fever; thereby preventing the internal inflammation upon which the principal danger depends, and making use of the best means of cure in case it has already taken place. But Mr. Cooper objects, in the first place, to active depletion by the lancet, the sheet-anchor of our hope, because "the patient has a great trial of his powers to undergo," &c. I am confident that this patient's strength would have been more reduced by the high inflammatory fever, had it not been kept under control by the lancet and purgatives, than it was by the active treatment pursued. He next objects to frequent purges, as they "disturb the processes of nature by the frequent changes of position which they produce." In answer to this objection, I must state, that a patient with this injury can get out of bed without the least relative change of position between the foot and leg, by which the curative processes of nature in the wound might be disturbed; for the foot is so well supported by the foot-piece, that it will not move at all, if a little caution be used. Next to bleeding, therefore, I consider purgatives the most important remedy. Opium in large doses to counteract irritation is also an indispensable medicine.

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* Philadelphia Journal, Vol. XII. p. 131.

Mr. Cooper says he has "seen but one instance of the compound dislocations of this bone, (astragalus;) and in that case the operation of amputation was performed;" but he gives in his essays the case of THOMAS GILMORE, a patient of Mr. HENRY CLINE, in St. Thomas's Hospital. As the injury in this case was of the same extent exactly as Mr. Besley's, is the only one of the kind in the essays, and was treated on Mr. Cooper's principles, it will be interesting to draw a comparison between the treatment and result of the two cases. Gilmore, aged forty-five years, was a robust but not corpulent labouring man, had been in the habit of drinking, and says he has been subject to the gout; was not bled at all, and took only two purges, although he had a pulse of 122°, hot and dry skin, was delirious, and often had costive bowels and foul tongue. On the sixth day, an erysipelatous inflammation came on the injured leg, supposed to have proceeded from a bruise on the calf; a fever secondary to the erysipelas arose, after which his principal medicines were bark, opium, porter, &c. This inflammation no doubt retarded his cure, but had sufficient depletion been previously used, it would probably not have come on. About four months after the accident was walking on crutches; and six months after it "he went out, being able to walk tolerably with a stick."

Besley was a corpulent man, but had the advantage of having been a temperate one, and something younger than Gilmore. He was bled to the amount of 219 ounces altogether, and was purged often. In one month and nine days after the accident, walked on crutches, and rode on horseback, bearing weight enough on his foot to mount a horse; and in two months and ten days after it, walked with the aid of a stick.

Art. XIII. *Case of Traumatic Tetanus, successfully treated by Tobacco injections.* By Josiah C. Skinner, M. D. of Edenton, N. C.

NEGRO ABRAHAM, the property of Joseph B. Skinner, Esq. residing near Edenton, aged forty-eight years, early in February, 1826, received a severe contused wound on the thumb of the right hand, which extended from the first joint nearly to the wrist. The integuments of the thumb were exceedingly contused and lacerated. The wound, after a few days, by the ordinary treatment, presented a healthy aspect, and promised a speedy recovery; but unfortunately, before the parts were entirely reinstated, he received another injury in the same place, and of the same character, which placed the wound in its original condition. No anxiety, however, was excited in the mind of the patient; and supposing that similar cases require similar treatment, he attempted to cure himself, without any regard to circumstances.

About the middle of March I was called to see him, at which time he was labouring under the following symptoms, viz. a violent drawing pain from the ensiform cartilage to the middle dorsal vertebra, thence along the spine to the occiput; bending the trunk of the body backwards, forming the opisthotonos of Dr. Cullen. The muscles which pull up the lower jaw, were exceedingly rigid, and affected with violent spasmodic contraction. The muscles of the upper and lower extremities were also affected with spasms, and the limbs were rigidly extended. The spasmodic contractions at this stage of the disease, came on every fifteen minutes, and continued from three to six minutes. Upon inquiry I was informed, that these, which were the most prominent symptoms, had come on gradually.

For two days prior to these violent affections, the patient had complained of a stiffness in his jaws and a general soreness of his system; but not suspecting any thing serious or alarming, he neglected to apply for medical aid. The wound on his thumb, I found had became an indolent ulcer, with callous edges, and without the least appearance of pus. The patient described the sensation of the whole thumb as being dead.

Treatment.—The first object that presented itself to my mind was to overcome the spasm and produce relaxation. The antispasmodic and relaxing power of the tobacco, (nicotiana,) have been long known. Its efficacy in violent spasmodic contractions of the intestines are almost daily witnessed, and the extent of its operation is equally known. Accordingly I ordered one drachm of tobacco to be boiled a short time in a quart of water, and half of that quantity to be thrown up the rectum. While the injection was preparing, I gave the patient one hundred and fifty drops of laudanum, and some strong brandy toddy, which produced no decided effect. The injection having been administered, I was equally delighted and surprised at its speedy and decided effects. Almost immediately it produced a violent and nearly insupportable pain in the bowels. The muscles became relaxed, his head capable of being thrown a little forwards, and all the pains of tetanus instantly ceased.

The tobacco now began to produce a little nausea; a profuse perspiration appeared on the surface; the injection was returned and the patient sunk into a sweet sleep.

Having accomplished this, which I consider the main object, I turned my attention to the wound. To establish a healthy action and a secretion of pus I deemed highly important. Accordingly escharotics and stimulating poultices were applied, which had the desired effect in a short time. I now left him under the tonic and stimulating plan of treatment, and directed the laudanum to be repeated if the symptoms of tetanus returned.

I visited my patient in four hours after I left him, and found him quite easy and his muscles perfectly relaxed. The pain in his breast, about his diaphragm, and along the spine continued, but not very severe; no alteration of treatment, however, was deemed necessary.

About six hours afterwards I was again sent for; I found his pains returning, and the spasms approaching. The laudanum and injection were repeated, which were attended with the happy effects of producing perfect relief.

During the summer he occasionally complained of pain in his breast, but not violent; the bark occasionally alternated with antispasmodics and stimulants, were continued during the summer, in order to restore the strength of his system and re-establish health.

In concluding the above case, it is necessary to notice one fact which occurred eight months after the attack of tetanus. He was taken ill of the typhus fever, and every symptom of tetanus, except the opisthotonos returned with considerable violence. In this case he was treated with the Peruvian bark, wine and cordials, which succeeded in effecting a cure, and he is now a healthy man.

I claim no credit of a discovery in the use of tobacco in tetanus; its virtues in this disease have long since been known, but I deem it a duty incumbent on every physician to make known to the profession, the successful treatment of every formidable and almost universally fatal disease.

ART. XIV. *Contributions to Pathological Anatomy.* By DAVID L. ROGERS, M. D. of New York.

THE changes which the solids of the body undergo by the action of disease, must form an important subject of inquiry to the professors of the healing art: and as our knowledge of diseased action increases, in the same proportion will the power exist of controlling and curing those diseases. A mere detail of morbid parts, without the symptoms which characterize these changes, would afford but little assistance to the practitioner of medicine; in rendering a knowledge of morbid changes important, a regular detail of circumstances should be added, that the chain of symptoms should remain entire from the commencement to the termination of the disease. Thus by comparing several cases of the same kind, the different stages would be indicated by positive symptoms—this renders the investigation of morbid anatomy valuable, and the record of cases beneficial to the profession.

To the investigation of diseased structure, we are indebted for the most valuable improvements in medical science, which the history of our profession teaches us, has improved in proportion to the advancement of our knowledge of the structure and functions of the human body. It is a fact, which will not be disputed, that the greatest practitioners in medicine have been remarkable for their correct anatomical knowledge, and the collections of morbid anatomy, made by MORGAGNI and HUNTER must ever stand as monuments of their talents and industry.

It is true that diseased structure does not, in all cases, lead to a knowledge of diseased action. We frequently find appearances after death which are irreconcilable with the previous symptoms; but this argues nothing against the utility of examinations after death. It sometimes happens that no diseased structure can be discovered after death, although strong symptoms previously indicated its existence. This may proceed from transferred sensation, while the disease may exist in some remote part, as, for instance, in the digestive organs, the irritation is frequently felt in some distant part, and on examination the seat of the disease is entirely overlooked; thus the inspection ends without adverting to the sympathies that might have led to the previous symptoms. It is the study of these changes, and the connection that exists between important organs and remote parts, that renders the study of morbid anatomy, so essential to the sound pathologist.

It is not intended in these essays to include a complete history of the changes to which the different parts are liable from diseased action; nor is it contemplated to preserve a systematic order in the arrangement.

The descriptions are drawn up from specimens in my own cabinet, and the valuable collection of Professor MOTT, to whom I am indebted for the privilege of thus enriching my observations.

Diseased Stomach.

Under this head we shall notice five specimens: 1st, a portion of stomach from a man who died with yellow fever: 2nd, a specimen from a case of typhus fever: 3rd, ulceration: 4th, enlargement, and 5th, schirrus.

Stomach of an adult dead from yellow fever.—This specimen of inflamed stomach was taken from the first case of yellow fever which proved fatal in New York, in 1823. He died with the usual symptoms which characterize the fatal termination of this disease, such as great distress in the epigastric region, delirium and black vomit. The body was examined a few hours after death, with great care. The diseased appearances were confined *entirely* to the stomach. The seat of the disease was confirmed by several other cases which I examined during that year. I was well satisfied of the fact, that the disease was situated principally in the stomach, and the derangement of the neighbouring viscera was but a secondary effect, as a consequence of the disordered functions of the stomach. In this case, the stomach was found much contracted, having externally a red and vascular appearance; its internal surface was collected into folds, and to such a degree as almost to obliterate its cavity. These folds had a florid appearance much resembling a fine size injection. Red specks could be observed resembling small arteries terminating on a recently divided surface; on different parts of the stomach, and more particularly at its great extremity, the villi of the internal coat were destroyed by ulceration, a small quantity of black matter streaked with florid blood was found in the cavity; this blood possessed different shades of colour, from the brightest red, to a dark brown, approaching black.

Stomach from a subject dead of typhus fever.—This specimen much resembles that from the case of yellow fever. Its internal surface is much less corrugated, but possesses the red florid appearance with a great congestion of its vessels. The red specks and ulcers were not observed, and the only difference that the anatomist could discover in the two cases from the action of disease, would be in the degree of inflammation. The premonitory symptoms being nearly the same, and the sensibility to pressure in the epigastric region existing alike in the two diseases, would lead to the belief, that inflammation of the stomach, more or less intense, depending upon peculiar causes, formed the true nature of these diseases, a conclusion deduced from the morbid anatomy, which we consider as the most legitimate source of pathological knowledge.

The black vomit might be offered as a diagnostic symptom, but this may exist at any time, depending upon a high degree of inflammation for its production; we are convinced of this from the fact of its existing in many cases where the inflammation of the stomach proceeds from chemical causes, such as arsenic, nitre, muriate of mercury, &c.

Ulcerated stomach.[*]—This specimen was taken from a gentleman. For five or six months previous to his death, he was frequently complaining of a loss of appetite, costiveness, tenderness in the epigastric region, a heaviness and uneasy sensation about the stomach. Cathartics and other medicines were administered without affording much relief: the symptoms increased in violence, a burning sensation was felt, when the lightest nourishment was taken into the stomach, and a loathing of all kinds of food. For some time previous to his death, he had almost an incessant vomiting of black matter, resembling coffee grounds.

He died very unexpectedly, without any symptoms indicating immediately approaching dissolution. The examination was made a few hours after death. On opening the cavity of the abdomen, a large quantity of black matter was found, such as had been thrown from the stomach by vomiting. The stomach was perforated by numerous holes of different sizes, and so very tender, as to tear by its own weight. The edges of these openings were inverted and had an irregular appearance. The internal surface was of a dark livid colour, and it was observed, that the internal coat was much shorter than the external, that is, the peritoneal coat had resisted the process of ulceration, much longer than the internal coat, and projected for some distance into the circle of the ulcer. This would form a distinction between the destruction of the stomach by ulceration, and that by the action of the gastric juice. A specimen of the latter, I have before me, its edges are smooth and regular, as if incised. When the stomach is destroyed by the gastric juice, as occurs in persons who die in full health; its situation is generally at the depending part of the great extremity, and the stomach usually has a healthy appearance.

Ulceration of the stomach, is of rare occurrence, and its destruction by the gastric liquor is frequently mistaken for it. Anterior to the explanation given by J. Hunter, of the destruction of the stomach after death, by the solvent powers of its own fluids, it was considered as a frequent disease. Cases of ulcerated stomach are related by MORGAGNI, BAILLIE and MONRO.

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[*] Specimen No. 15, of Dr. MOTT's Cabinet.

Enlarged stomach.—The stomach occasionally becomes enlarged without any mechanical cause sufficient to account for it, and proceeding from a diseased condition of its coats. A specimen before me is from Dr. Mott's Museum, No. 53. It was taken from a gentleman aged sixty-five years. The first symptoms were so slight that they were allowed to advance for some time without notice. He was naturally a moderate eater, and his food was prepared in the plainest manner. He at first complained of a loss of appetite, and a slight irritation of the stomach after eating. It was soon found necessary to desist entirely from taking solid food, and he was confined to broths and the mildest drinks; but this produced a sense of weight and uneasiness until vomiting was excited, and it was again thrown up. As soon as this occurred he was perfectly easy, and at no time did he experience any pain. Notwithstanding the means employed to arrest the disease, the vomiting increased in violence, and so great was the irritation that the mildest drinks could not be retained, and emaciation became extreme before death. He was examined a few hours after death. The enormous size of the stomach was the first object that attracted attention on opening the abdomen, which it appeared entirely to fill. It was removed from the body the better to examine its unnatural size. Its form was unaltered; the enlargement appeared alike in all directions; externally its colour was natural. It was diminished in its thickness, some parts of it being transparent, and resembling when touched a single layer of the peritoneum. The inner surface of the stomach had lost its natural appearance. It had a smooth shining surface, with considerable vascularity. No traces of a villous coat could be discovered, except occasionally a small elevation could be perceived which resembled it. The pyloric orifice was contracted and thickened, but not to such a degree as to interrupt the passage into the duodenum. Some idea may be formed of the immense dimensions of this stomach, when it is stated that it contained *twelve pints* of water without any force being applied to distend it.

*Schirrus stomach.**—This specimen is remarkable in consequence of its disorganization, as not a vestige remains of its original structure. The early history of this case is but little

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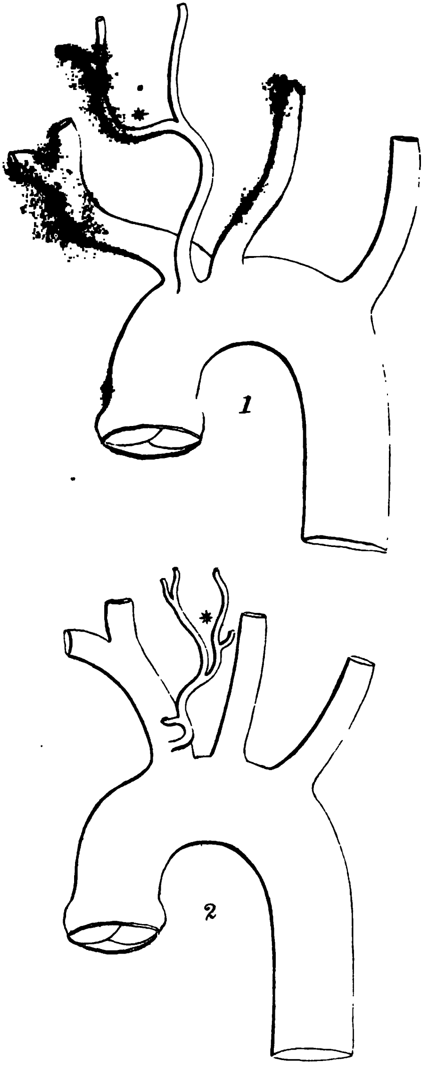
* Specimen, No. 55, of Dr. Mott's Cabinet.

Pa. 117. 118.



GODMAN'S Arterial irregularities.

* Anomalous branches.

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known. In the latter stages, from its great bulk, it was easily felt externally. It was attended with considerable pain and great irritability, which prevented his taking a sufficient quantity of food for the support of life; the lightest food was almost immediately rejected, attended with a vomiting of black matter resembling coffee grounds. The connection of the stomach with the aorta gave to it a strong pulsation. The stomach weighed about four pounds after its appendages were removed. Its parietes measured from an inch to an inch and a half in thickness, and a section gave the appearance of a fibrous structure diverging from the centre to the circumference, as is observed in schirrus of the breast and other glandular parts. A great number of calculous concretions were found interspersed throughout. The cavity of this stomach was almost obliterated; it would not contain more than from one to two ounces of fluid.

It is a question of some doubt how far the action of the stomach had any agency in rejecting the food from its cavity. The cavity remaining permanently open after death, and the force it required to bring its parietes in contact, led us to doubt the possibility of any contraction during life. We shall merely state the fact without attempting any solution of the question.

Art. XV. *Note of some Irregularities of the Arterial System.*

By John D. Godman, M. D. et P. [With a Plate.]

DURING the past winter we have observed a very considerable number of irregularities in the arterial system, similar to such as have been hitherto reported. The high bifurcation of the brachial artery, the origin of the profunda femoris just above, beneath, and below the ligament of Poupart; the origin of the obturators from the epigastrics, of the right hepatic from the superior mesenteric, &c. were in several instances met with. In two instances occurring successively, there were two emulgents to each kidney, the first occupying the ordinary place, and the second arising about an inch below. In another subject, two emulgents were found on the right, and one on the left side.

The most singular deviations we have ever observed, are those represented in the accompanying plate. The first is the aorta of an adult male subject, in which an anomalous branch is given off from the arch, immediately between the root of the innominata and right carotid. This branch ascended almost perpendicularly to the inferior edge of the sternal end of the clavicle and then inclined towards the centre of the body. It terminated in two branches of considerable size which ramified on the inferior part of the thyroid gland, in this subject so enlarged and elongated on both sides, as to descend very nearly to the edge of the sternum. The regular thyroid arteries, from the external carotid and subclavian, were distributed as usual in this gland. The left lobe was as much elongated as the right, but was without any additional artery, which precludes the possibility of attributing the state of enlargement to the distribution of this vessel immediately from the aortic arch. The origin of the left subclavian was very peculiar and uncommon; it arose from the most posterior part of the superior surface of the arch, full two inches distant from the left carotid.

In the second case represented in the plate, we have the aorta of a female, in which we find a branch similar to the irregularity above described, taking origin from the innominata, a short distance from the aorta. This branch was distributed upon the inferior part of the right lobe of the thyroid gland, exactly as in the first observed subject; but the gland was in no other respect extraordinary.

This branch from the innominata has not been noted by any one, except ALLAN BURNS, who, in his surgical anatomy of the head and neck, makes the following remarks:—

> "The thyroid gland generally receives its supply of blood from four vessels, but we sometimes find a fifth, sent to it by the arteria innominata. Where this anomalous vessel exists, it will usually be found entering the cross slip of the gland,* just on the fore-part of the trachea. This artery sometimes supplies the place of one of the regular thyroid branches. In extirpating the thyroid gland, these facts must be recollected." p. 256.

As far as we know at present, no one has hitherto recorded an instance of the origin of this anomalous thyroid branch, *directly from the aorta.* We have heretofore given instances of the origin of the vertebral arteries from the back part of the arch, and that irregularity is not exceedingly rare. The anomalous thyroid branch, although to be ranked among the most uncommon irregularities, we are inclined to believe will be hereafter found to occur sufficiently often, to require that it should be held in remembrance in all operations at the lower part of the neck.

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* In both instances observed by us, the irregular artery was distributed on the inferior part of the right lobe.

We have not attempted to be precise and minute in describing the exact relations of these irregularities to the other parts, first, because they *are irregularities*, and very seldom occur alike, and secondly, because in a diseased condition, the only one in which we are likely to meet with them in the living body, their relations would be necessarily changed. It is a circumstance with which we might be amused, were not the stupidity evinced such as to cause sorrow rather than mirth, to read the critical observations from time to time uttered, by those who tell us how surgeons *ought* to have operated, or *might* have succeeded, in cases where the whole character of the parts was entirely altered and distorted by tumour, aneurism, or other disease. One of these *wise men* will read an account of a great and difficult operation, and afterwards, on the body of an emaciated subject, where there is not even fat in his way, will take up vessels, &c. and then with great gravity state that Dr. —— might have done in such and such a way; and he would "recommend," that instead of "a large," a "small incision" should be made in similar cases, with other impertinences equally absurd and ridiculous.

It should be the aim of all those employed in the study of anatomy, to observe and record every circumstance which may tend to enlighten the mind of the physiologist, or steady the hand of the surgeon. But to such as are engaged in obscuring the science, by presenting to the inexperienced, views of fact and principle suited to produce nothing better than error and self-conceit, a liberal measure of contempt should uniformly be awarded.

REVIEW.

ART. XVI. *A Letter to the Hon. Isaac Parker, Chief Justice of the Supreme Court of Massachusetts, containing Remarks on the Dislocation of the Hip-Joint,* &c. By JOHN C. WARREN, M. D. Professor of Anatomy and Surgery in Harvard University. Cambridge, 1826, pp. 142.

THIS very able production, which, with the attending documents and illustrations, occupies one hundred and fifty large octavo pages, was elicited by the following circumstances:*—

CHARLES LOWELL, tradesman, of the town of Lubec, in the state of Maine, about thirty years of age, and of a somewhat muscular frame of body, was riding a young and restiff horse on the 7th of September, 1821. The animal suddenly reared and fell backwards upon the rider in such way, that the left thigh of the latter received the principal momentum of the animal's weight. When the rider was extricated from his perilous situation, he found himself incapable of the ordinary use of the limb. The family physician, named JOHN FAXON, was first sent for, who declared the accident to be dislocation of the hip-joint, and attempted in vain to set it. A second practitioner of the neighbourhood, living at the town of Eastport, and named MICAJAH HAWKS, was then sent for, who, concurring in the opinion of the first, that the injury was a dislocation, also made fruitless attempts to reduce it. Excepting the fall, the sudden inability to use the limb, and its pointing off in an awkward direction, none of the leading symptoms which occurred at the time, and upon which the opinions of these practitioners were grounded, are stated in a satisfactory manner in the report of the trial. We are left, however, to infer, from the very imperfect and unpromising means of reduction to which they resorted, that they had some indistinct notions of the head of the os femoris being thrown below its usual level. For example, in the first operation by Faxon, the patient being laid lengthwise in the bed, "a ball of cloth was placed between the thighs; the injured limb was carried out, and the ball served as a fulcrum for the leg to pry over, and to be made use of as a lever."* Also, in the second, the patient Lowell was placed across the bed, a sheet was passed around the well limb, and a towel tied round the knee of the lame one, and several assistants applied themselves to a violent abduction of the two thighs, which motion was alternated with adduction or carrying the crippled one inwards. One of the surgeons, Faxon, also, at some time during their attempts, held the left ankle, and carried it inwards. The latter trial occupied about ten or fifteen minutes, when the operators ceased, and declared that the limb was well set. Lowell continued, notwithstanding, in great pain, especially on the fourth and fifth day after the accident, and expressed his doubts of the limb having been set. He remained in bed for fifteen days, when he got up to have it made, sustaining himself by the bed-post and the shoulder of an assistant. The leg of the injured limb, very soon after the accident, contracted, and the patient complained of pain in the hamstrings.†

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* Report of the trial of an action, Charles Lowell against John Faxon and Micajah Hawks, for mal-practice in the capacity of physicians and surgeons, Portland, 1825.

On the first of October, twenty-five days after the accident, Lowell stood up again, resting upon the shoulder of the same assistant. He then called the attention of Hawks to a hollow in his hip, asking the cause of it, for it was so well marked as to be visible through his pantaloons. Hawks replied, that "it was a natural consequence, and when he gained strength it would fill up;" and then took hold of the limb, and swung it, with a renewal of his assertion that it was set properly.

On the 23d of October, a very important symptom is first of all regularly alluded to, by the patient asking the surgeon, (Hawks,) what is the cause of the difference in the length of the limbs, the injured one was the longest; to which the surgeon replied, that it looked as though it was not set.

We have thus, by the very slow perceptions of the surgeons to the real nature of this case, at length ascertained, that in the seventh week of the accident they saw that the injured limb was still in a state of dislocation, by its restricted motions, the tension of its muscles, the hollow in the hip, and the increased length of the extremity.

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* Report, p. 9.

† Ibid.

In the succeeding month of December, Dr. WARREN, the distinguished and able teacher of anatomy and surgery to the medical school of Boston, the author of the pamphlet under consideration, was called upon by Lowell for advice in the case of his hip. From the testimony of Dr. Warren, who made a very careful and scientific examination of him in various postures, it appears that Lowell at that period still laboured under the disability, the origin of which has just been traced to the fall of the horse. The most prominent features at the time, were a turning of the knee outwards, the bending of the thigh forwards, so as to make an angle with the body, and an increased length of the limb amounting to three inches, which was manifested by a comparison of the relative situations of the knees. Dr. Warren also ascertained to his satisfaction that the head of the os femoris was placed behind and below the acetabulum.

After this examination, Dr. W. communicated to the patient that he had a dislocation of the hip-joint of the most difficult kind, and declined performing any operation upon it. This resolution of forbearance was, however, abandoned, inasmuch as Lowell felt the strongest desire to submit to any treatment which promised even a possibility of success, saying, "I am young, and depend upon my bodily exertions for my living. I am ready to run some risk of my life for the chance of getting the use of my limbs again." The patient was afterwards conducted to the Massachusetts General Hospital, and a consultation called, at which were present Drs. TOWNSEND, MANN, WELSH, and SPOONER. These gentlemen concurred decidedly in the opinion that Lowell's limb was dislocated. During the efforts at reduction, which, from the detailed description entered into by Dr. W. must have been to the greatest degree systematic, both in the application and use of the apparatus, the movements of the head of the thigh bone were recognized by him and by his associates. After many varied and powerful, but fruitless efforts, it was acknowledged by all, even the patient himself, that the reduction was impracticable. The patient then rested for a day or two, and being well enough, left the hospital.

In a week afterwards, Lowell underwent another operation for the reduction of his dislocation, from another surgeon of much experience and skill; it was unavailing. A fortnight from the last being over, he underwent a third operation for dislocation, from the hands of a person of reputation for such accidents. It also failed.

Fully convinced now of his miserable situation, and the last shadow of hope for its relief having disappeared, Lowell determined to obtain legal redress for the failure of the first surgeons, to wit, Faxon and Hawks; supposing that the incompetency they manifested, would, upon trial, be followed by an amercement, equivalent to the disability they had failed to cure. On meeting with Dr. Warren in the streets of Boston, this intention was declared; the doctor dissuaded him from it, alleging the impropriety of his blaming his medical attendants in a case of such difficulty, and when they had done the best they could for him, and that he could not expect to recover damages under such circumstances. Lowell however persisted, on the score of Hawks having neglected him, both by an unreasonable delay (ten days,) of a visit, upon being sent for, and by his not attempting to replace the limb, when, by his own acknowledgment it still continued out of joint.

Dr. Hawks, it appears, is a practitioner in much demand at Eastport, the place of his residence, and was separated by an arm of the sea from his patient; it was therefore not very convenient for him to come immediately upon a call, and had on one occasion at least during his attendance, alluded to his want of time, by stating, in a phraseology which I suppose had a provincial meaning of great force, but which I am sure no one to the south of forty-two degrees would be able to understand, without the connecting circumstances, "that he was so driven that he could not possibly leave."

At the expiration of a year from the original disaster, Lowell's resentment being filled to the brim, he instituted a law-suit. The admitted want of skill of Faxon was no excuse, though he had made no pretensions to surgery, and had very modestly arranged himself, to use his own language, during the first efforts at reduction, in a "second hand's birth,"* and continued afterwards in a subordinate capacity to his colleague. Faxon, indeed, never assisted in consultation, subsequently to the first day, and had been reprobated by Hawks "as an old quack, and not fit to doctor a goose,"* and of no more use than "a hog or a sheep."† He was, in fact, dispossessed of the ground by Dr. Hawks, and by that circumstance left the responsibility of the case with the latter; for notwithstanding his own frequent visits to the patient, it appears that one of the witnesses, who spent much time in the room of the patient, "was not knowing to his, (Dr. Faxon,) making any examination" of the limb.‡

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* Report, p. 10.

If the unassuming and retiring ignorance of Faxon could not save him from the pains and penalties of a law-suit with Lowell, the more prominent responsibility of Hawks, notwithstanding his being "so driven that he could not possible leave," was much less likely to obtain mercy.

On the first trial of this action, the jury gave a verdict of one thousand nine hundred dollars damages to the plaintiff against the two practitioners, Faxon and Hawks. It was then brought to a second trial, and an award of one hundred dollars damages was given. It was then brought to a third trial, in which the jury acquitted the first physician, Faxon, and as one of the jurymen was taken sick, the remaining parties, to wit, the plaintiff and Hawks agreed to withdraw without costs on either side.

Dr. Warren says—

"Previously to the occurrence of this third trial, I was visited by the plaintiff, for the purpose of obtaining my deposition to the facts which had come within my knowledge. On learning the object of this visit, I declined any agency in his case. I stated to him, that all the service in my power had been rendered, and that I thought myself fairly entitled to be excused from further trouble, especially as I had discouraged the suit, and did not feel justified in taking any measures, likely to operate against the defendant; he being of the same profession with myself, and therefore entitled to a reasonable degree of fellow feeling. He replied, that he was an injured man, and must have justice, and that for this purpose, my deposition was essential.

"He left me without obtaining my consent to give the deposition, and soon after, a notification was received from Lemuel Shaw, Esq. to appear at his office, and answer to certain questions proposed by the parties on either side. I did not appear on this notice, but applied to Mr. Shaw, on whose science and integrity I could repose the most perfect confidence, with a view to ascertain whether I could be compelled to answer in such case. This gentleman informed me that I must either appear to give testimony, or be responsible to the party aggrieved by my non-attendance, to the amount of damages by him sustained. A summons was afterwards issued, and money tendered in legal form, as is usual in cases where the attendance of a witness is to be compelled.

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* Report, p. 9. † Idem, p. 10. ‡ Idem, p. 8.

"Accordingly I appeared, and submitted to a series of interrogatories and cross interrogatories, which occupied about three hours. My answers were made according to the best of my knowledge, and recollection at the time; and comprehended an account of the facts of the case, already stated, with some others. The substance of these answers was nearly this: That I did at a certain time attempt to reduce the dislocated limb of the plaintiff, in conjunction with other physicians and surgeons named;—that the reasons for believing the existence of a dislocation in this case, were, the unnatural position of the limb; its elongation; the accompanying contraction of the thigh and leg; the displacement of the trochanter; the displacement of the head of the thigh bone, and its appearance in an unnatural situation, in or near the ischiatic notch; the inability to use the limb in the ordinary manner, and the consequent necessity of extraordinary and constrained movements;—that manual force might succeed sometimes, in reducing dislocations of the hip-joint, and that when this failed, mechanical means must be employed;—that the elongation of a disordered limb might be produced, to some extent, by simple relaxation of muscles, or by relaxation of muscles accompanied with fracture of the bone;—further, that the thigh bone, after being reduced, might be thrown out again, by the application of considerable force, or by movements of considerable extent, but not otherwise;—that a surgeon who employs the best means in his power, ought not to be responsible in damages;—that a surgeon who has opportunity to examine a case of dislocation, immediately after the injury, other circumstances being equal, has better means of judging of the nature of the case, than one who examines several months after;—that the case in question, though not without its difficulties, appeared to me to be one, in regard to which, men of high standing in the profession would not differ. The manner in which the reduction was attempted, was also described.

"The questions proposed to me, were also proposed to three of the consulting physicians, who had examined the case with me. The coincidence of their opinions with mine, at the distance of more than two years from the occurrence described, affords a strong proof of the authenticity of the evidence, and the distinctness of the most important impressions made by this case on each of the individuals questioned."

From Dr. Warren's account, the affair would have ended with the third trial, but as one of the attornies of the defendants made a publication of it, in which an extraordinary kind of evidence was introduced in order to show that Lowell had not from the beginning met with the accident so well attested by Dr. Warren, and by the general tenor of the case: Dr. Warren, in duty to himself, and to the institutions which he serves with so much fidelity and success, felt bound to analyse this evidence, and to rebut the aspersions of the attorney. In executing this task, which Dr. W. has done in the letter, whose title forms the beginning of this article, he has fully sustained the high reputation which he enjoys both at home and abroad, and has manifested an acuteness of diagnosis, a spirit of research, and a strength of reasoning, entirely worthy of himself. His pamphlet indeed forms an excellent model for investigations of this kind, for while urging his argument home upon his opponents, he has tempered its force with so much mildness of personal bearing, such charitable abstinence from all offensive expressions, such a tremulous regard to the general standing and estimation of his profession, that he cannot fail to excite the strongest admiration of the reader for the suppression of feelings outraged by undeserved aspersion, and flippant common place calumny.

From the facts alleged, to wit, the concession of the medical attendants first employed, the simple and untutored observations of the patient's acquaintances, the circumstances immediately consequent to the injury—the scientific and skilful examination of Dr. Warren and his associates in the hospital, their unavailing efforts at reduction, and the repeated efforts of other competent persons; the conclusion is inevitable from continuous testimony that Lowell's hip, dislocated by the fall of the horse, remained in that state and had at no period been replaced. Yet, strange to say, in an examination by a surgeon nine months after the injury, and while the essential symptoms of dislocation were still present, this surgeon declared that the hip was not out of joint, nor ever had been so.* This opinion, from the sectional eminence of the gentleman advancing it, influenced no doubt to a great degree the verdict of the jury, left the public mind with the plainest possible evidence before it in a state of astonishment at the difference of medical opinions, and furnished the most copious ground of argument to the counsel of the defendants. For our own part we do not for a moment doubt the integrity of feeling with which this testimony was given, the author of it has borne a professional reputation not surpassed by any in New

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* Letter, &c. p. 13.

England, so far as we can judge by the general impression concerning him, and has grown old in the dispensation of the most useful, diffused, and practical charities of his calling. In admitting, therefore, on his part the purest of motives; the most sincere desire of a just conclusion; and not even making a surmise, whether his prepossessions were gained by the previous intelligence with Hawks, with whom he seems to have been on terms of some intimacy at least; or even whether the spirit of rivalry was roused by an opportunity to gainsay the opinion of a comparatively youthful competitor whose intelligence, zeal, and success had already overspread the land with his reputation; we must confess that this opinion, taking into consideration all the circumstances under which it was given, is one of the most remarkable for its peculiarities and obliquity that has been presented to us. That the reader may have a full opportunity of canvassing it, and of appreciating the judicious analysis of it by Dr. Warren, we quote it in full.

"I NATHAN SMITH testify and say, that in the month of June, in the year 1822, I examined Charles Lowell then at Eastport, respecting an injury of his hip which he stated to have happened the fall before. My examination was lengthy and critical, and my opinion then was, that the thigh bone was not out of joint; and I have not altered my opinion since. From the nature of the injury as described to me by the said Lowell, it could hardly be possible that the hip should be dislocated. A fall on the hip, with the weight of a horse upon it, would be likely to break the bones of the pelvis, and might drive the head of the bone through the bottom of the socket, but could not dislocate the joint; and in my opinion if there is any derangement of the bones, it is a fracture and not a dislocation. In that case it would not have been in the power of Dr. Hawks or any other medical man to have rendered the said Lowell any effectual assistance, more than to have administered remedies to keep down inflammation; they could not have altered the situation of the bones. As for the apparent lengthening of the affected limb, I think that it is owing to the preternatural contraction and relaxation of the muscles situated about the hips; and is made to appear so by the twisting of the bones of the pelvis on the spine. Any person when sitting in a chair, can by an exertion of the muscles make one knee project beyond the other, as much as Lowell's did when I saw him. The same lengthening of the limb takes place in a disease of the hip called the hip disease, which partakes of the nature of white swelling, where no external violence has been received. It is difficult to determine, in case of injuries of the hip, precisely what the injury of the bones is; but it has frequently happened within my knowledge, that by a fall directly on the hip-joint, though the bone was not dislocated, as was evident by the natural position of the foot and limb generally, and from its being moved by the hand of the surgeon in all directions, yet the patient has never recovered from his lameness; and in several instances they have never been able to walk afterwards. In cases where the thigh bone is dislocated backwards, and the head of the thigh bone rests on the back part of the broad hip bone, the limb will be a little shortened, and the foot will point towards the other foot, and cannot be turned outward in the least. In case the head of the thigh bone should be lodged in the ischiatic notch, so called, the limb would or might be a little lengthened; but the foot would be turned pointing towards the other foot, and could not be turned outward in the least. Both when the head of the bone is on the back of the hip bone and when in the ischiatic notch the head of the bone can be distinctly felt by the hand. When the head of the thigh bone is dislocated downwards and rests in the thyroid hole, so called, the trochanter will be misplaced and the head of the bone will be felt on the side of the perineum, between the scrotum and anus, and the foot will be turned out. Very great violence done to the parts and consequent swelling might render it difficult to ascertain by feeling, the position of the head of the bone soon after the injury; but when the swelling had subsided, it might be ascertained by the touch. As to the length of time, which may elapse after a bone is dislocated, before it will be impossible to reduce it, it is uncertain, and probably may differ in different cases. But the time that a joint may remain dislocated and yet admit of being replaced, is longer than has been generally supposed. I reduced a dislocated shoulder that had been out seven weeks, another that had been out nine weeks, and one that had been out four yearly months. I should not think that a hip-joint having been out of place six or even eight weeks, would render it impossible to reduce it. It might even be a more favourable time for the operation, than immediately after the accident, especially if the soft parts at first were much bruised and swollen.

"I do not think that the mechanical powers, such as the wheel and axle, or the pullies, are necessary to reduce a dislocated hip or any other dislocation. They have sometimes been used with effect, but they have oftener been injurious; and what can be effected with them can be effected without them. It is not the quantum of force which reduces dislocated bones, so much as it is the direction of the force; and this can be given by the hand of skill, better than by pullies, &c. In reducing the hip-joint it cannot be done by direct pulling; but we take advantage of the thigh bone as a lever to move the head of the bone from the place where it may be lodged, and bring it into its former situation. In some cases the fulcrum is some of the bones of the pelvis; in others we have to supply it by some external body.

"Question by Defendants' attorney. Did you ever reduce a dislocated hip? And if so, please to state the manner.

"Answer. I once reduced a dislocated hip-joint. It was dislocated up-ward and backward; and after pulling it in every direction but the right, it was reduced easily by carrying the knee towards the patient's face. I had the assistance of two men only.

"Question by the same. Would the distortion of the pelvis, by contraction of the muscles, produce an apparent lowering of the hip-joint, or a hollow up the hip?

"Answer. It might, and probably would.

"Question by the same. If the head of the thigh bone were forced through the bones of the pelvis, would that produce in any measure the same effect?

"Answer. It would.

"Question by the same. Is the dislocation of the hip-joint an unusual occurrence? and might a skilful surgeon fail in any attempt to reduce it?

"Answer. A dislocation of the hip is very rare; and probably not one medical man in ten, would be able to reduce it.

"Question by the same. Would a failure to reduce a dislocated hip subject a man to the just imputation of ignorance in his profession?

"Answer. I should think not, for men of science and reputed skilful, have failed.

"Question by the same. Do you know Dr. Hawks of Eastport? And if so, what do you think of him as a man acquainted with his profession?

"Answer. I have been acquainted with Dr. Hawks; and think him above mediocrity in the knowledge of his profession, especially in anatomy.

"Question by the same. May not physicians and surgeons disagree in opinion respecting a disease of the hip, without the imputation of ignorance or negligence?

"Answer. Men of science and skill have often disagreed in such cases.

"Question by the same. Were the head of the thigh bone lodged in the ischiatic notch in Lowell's case, how would the limb act? Would it be as when you saw it at Eastport?

"Answer. When the head of the bone is lodged in the ischiatic notch, the foot would be turned inward, which was not the case with Lowell when I saw him.

"Question by the same. What is the situation of the ischiatic notch in the living subject? And is it filled or partially so, with any substance?

"Answer. In the living subject the ischiatic notch is filled with a firm strong ligament, which is again covered with muscles, so that the head of the bone could not sink much into it.

"Question by plaintiff's counsel. When you were at Eastport, before you examined Charles Lowell, and while you were at some distance from him, did you say to any one, that Lowell's hip was not dislocated or to that purport, and if so, to whom did you make the observation?

"Answer. I do not recollect that I did, and am very confident that I did not.

"Question by the same. Did you tell Lowell he had better drop his action and try to get well, which would be better than to try to get damages of the Doctors?

"Answer. I think I did.

"Question by the same. How long did you take to examine Lowell's hip-joint, and did you attempt in any manner to restore it to its proper place and appearance?

"Answer. I did not measure the time, but put him in various positions and examined him in company with Dr. Frye till I was satisfied it was not out of joint. I did not make any attempt to replace the bone.

"Question by the same. What did you prescribe for the remedy of his limb, and what encouragement did you give him?

"Answer. I believe I advised him to make an issue on his hip and keep it open a long time.

"Question by the same. Did you tell him he would probably be a well man in a year, if he followed your prescription, or to that effect, and did you give it to him in writing?

"Answer. I think it probable that I gave him encouragement that he might get well, or better than he was then; but do not recollect whether I gave him a written prescription or not.

"Question by the same. Had you heard Dr. Hawks's representation of Lowell's case before you saw Lowell?

"Answer. I had.

"Question by the same. If there was a distortion of the pelvis so as to occasion the appearance of Lowell's limb, would it not have occasioned pain at or near the back bone?

"Answer. I do not know that it would. In cases of disease of the hip-joint, where the pelvis is distorted, the patient does not complain of pain in the back to my recollection.

"Question by the same. If there were a dislocation of the head of the bone into what is called the ischiatic notch, would it not occasion the same appearance that Lowell's exhibited?

"Answer. I think not.

"Question by the same. How do you account for the hollow appearance in Lowell's hip, at the place where the head of the thigh bone was inserted, and did you feel it to be hollow when you examined it?

"Answer. I did not perceive any more hollow on the hip-joint, than might be accounted for from the effect of the muscles, or a fracture of the pelvis. NATHAN SMITH."

It appears then that Dr. Smith, after a "lengthy" and critical examination of Lowell's limb formed the conclusion that it could not be dislocated by the horse falling on it, as was described. We do not see the propriety of this inference, and confess for our own parts that we could believe any kind of dislocation to result from the confused and violent struggles of a fallen horse and its rider. The limb fallen upon, was probably in a state of abduction, at least equal to what is used in riding, inasmuch as the horse fell upon its inside, and this state of abduction was no doubt immediately increased by the weight of the horse, and also the variations of the animal's position in his attempts to get up again. The abduction of the thigh, it is known to anatomists, and has been stated by Bichat, will in a subject produce its dislocation—abduction will also do it in a living person, the cases are too numerous to require any specific quotation, and are illustrated very happily by one recorded in Dorsey's surgery. The unusual situation of the head of the bone, ascertained by Dr. Warren, may have been produced by the very first act of violence; or the dislocation, may have been first of all an ordinary one, and in the immediately consecutive struggles of the animal made anomalous. It is, however, useless to conjecture on possibilities and presumed positions of the horse and the rider: the broad facts are sufficiently evident that the bone was dislocated in the struggle, and never was replaced, that the means of reduction were not systematic enough, and besides, were of inadequate power, even if they had been directed in the appropriate manner.

As to the suggestion of the deponent amounting to an asseveration of the fact that the bones of the pelvis were broken, Dr. Warren's argument is entirely triumphant. For, says he, "the consequences of a fracture of the socket, or any extensive fracture of the pelvis, especially such as could allow the thigh bone to hang down two or three inches, must be exceedingly formidable, and even in a large proportion of cases fatal. In order to produce such a phenomenon, the pelvis must be crushed in pieces. I should conjecture: for I can only conjecture, since there is not, that I know of, any account of a fracture of the socket, accompanied with material elongation of the limb. On the contrary, in all these accidents the limb is shortened, if its length is in any way altered." The increased mobility of the limb, the crepitus, the instability of the os innominatum upon pressure will serve still further to elucidate this case. Dr. Warren's opinions are here very satisfactorily, and indeed incontrovertibly maintained by general experience, by reference to the anatomy of the parts, and also by judicious applications of the testimony of one of the ablest surgeons of Europe, Sir Astley Cooper.*

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* See Letter, &c. p. 41, 42, 43.

The action of the pelvis is also so inseparable from the function of standing and walking, that if it had been fractured to the extent inferred by Dr. Smith, there cannot be the smallest doubt of the utter inability of Lowell to stand, which he did on the fifteenth and on the twenty-fifth day, and to be removed by walking on, or before the twenty-third of October; that is to say, from six to seven weeks afterwards. A flight through the air would indeed have been but little more miraculous.

The apparent lengthening of the limb the deponent thought to depend upon the preternatural contraction and relaxation of the muscles situated about the hip. The testimony is defective in not naming these muscles, for after having attended several courses of anatomy, we cannot conceive what muscles they are, which, instead of keeping the proximate articular surfaces closer together, should do what none others are known to do: that is, keep them further apart. The deponent, however, apparently not satisfied with this explanation of the increased length of the limb, adds to the sentence, that it is made to appear longer by the twisting of the bones of the pelvis on the spine. No mode of expression in anatomy could be more unhappy than this; the bones of the pelvis twisting on the spine would be an anomaly in the human frame, for the deponent must surely know that the only union between the spine and the pelvis is at the junction of the last lumbar vertebra with the first bone of the sacrum, and that from the nature of the articular connexion between the proximate surfaces there, the motion is scarcely appreciable. We are rather disposed to refer the idea thus communicated to a faulty phraseology than to a fault of knowledge in anatomy, and therefore we may suppose that he meant, that by a rotatory movement of the articulations in the lumbar vertebræ, one side of the pelvis could be advanced while the other receded. If this be really meant, Dr. Warren's judgment in the estimation of the deponent must be weak indeed, when he is supposed to mistake a common and constant movement of the lower part of the trunk of the body for a dislocation of the os femoris, and when it is also recollected that one of the most common place lessons in surgery is to keep the pelvis straight, in inquiring into accidents befalling the hip-joint.

The deponent, after these far-fetched and unapt suggestions, to wit: the relaxation and contraction of the muscles, and the twisting of the bones of the pelvis, seems next to think that the disease may have been morbus coxarius or the inflammation of the hip-joint. But the analogy here is equally unfortunate for him; for, in this disease, though the first effect of it be to lengthen the limb slightly, yet when the head of the bone is once by it fairly pushed out of the socket, then the limb is very much shortened by the muscles drawing the os femoris upwards and backwards. The deponent's opinions here are so extraordinary, that they look almost like a predetermination to shut his mind to the more obvious bearings of the case, and to hunt at random for any cause, except the right one, for the crippled limb of Lowell.

The writer of this article once met with a similar difficulty in a consultation. A boy in good health, and in the enjoyment of all the usual motions of the joints, was seized by the head by one of his playmates, and in that way was his head pushed over till it touched the ground, or nearly so. The feat being accomplished, the playmate ran off, and the boy, on erecting himself, found that his head was permanently directed to one side, and his neck inclined in a corresponding direction. A consultation being called on a representation of the case, the consulted physician, instead of admitting in the attested distortion of the boy's frame the consequence of his playmate's trick, began a train of doubts and suggestions as follows:—It was true the neck had been concave on one side, and protuberant on the other, yet statuaries had, in their observations of the human body, noticed, that when there was a depression on one side, there was frequently an elevation on the other. It also happened that scrofulous tumours not unfrequently caused prominences on the surface of the body, and possibly such might be the case in the present instance. There were many other possibilities which it would be tedious to narrate. It is only necessary to mention, that having reached the patient a few minutes after the accident, and not viewing it either as a natural deformity or as a scrofulous tumour, the neck was restored by an effort at reduction, to its proper position, and the boy immediately executed all the motions that he had ever enjoyed.

The evidence of the deponent goes on to state, that he does not think "the mechanical powers, such as the wheel and axle, or the pullies, are necessary to reduce a dislocated hip or any other dislocation. They have sometimes been used with effect, but they have oftener been injurious." This very singular opinion in regard to the hip dislocation, does not seem to be founded on observations of the deponent numerous enough to make it even plausible; for his answer to the question—did you ever reduce a dislocated hip? is, I *once* reduced a dislocated hip. Dr. Warren has combated this notion by the usual arguments in favour of pullies, such as the strength, steadiness and regularity of their action, in extending the contracted muscles, and their also enabling the operator to proceed without that confusion and bustle inseparable from the employment of many assistants. If arguments, however, should be insufficient to settle this question of the utility of pullies, the authority of experience will determine it. The usage of hospitals in hip-dislocation is to apply the pullies from the commencement of the efforts at reduction; by their judicious application it is seldom that a recent dislocation of the hip is not reduced, and even cases of an unpromising kind, such as those of five and six weeks standing. For example, we have lately seen at the Alms-house a recent dislocation of the hip reduced in five minutes or less time from the commencement of the extensions; and the last year, one of six weeks duration was reduced after having resisted the most powerful application of force by means of the hands alone, from intelligent practitioners residing in the country. For our own part, we think, that if any question in surgery be well settled, it is the vast superiority of pullies in hip-dislocations, over common manual assistance; and we think it not unlikely that the opprobrium thrown on the profession in New England of the incapacity of more than one medical man in ten to reduce hip-dislocation might be diminished by the aid of a proper apparatus.

Having thus given the digest of Dr. Warren's refutations of the surgical opinions of Dr. Smith, we will take leave of the evidence of the latter by calling the attention of the reader to a very considerable error in its anatomical details. To the question about the condition of the sciatic notch, the reply, it is seen, was, the sciatic notch is *filled* with a firm, strong ligament. There is certainly neither authority nor observation for the support of this affirmation; the notch, it is true, is subtended by the sacro-sciatic ligaments, but cannot possibly be filled with a ligament so long as the pyriform muscle and the great sciatic nerve hold their places in it, and in the general mechanism of the lower extremity.

In regard to the justness of the verdict of the jury on the third trial, in acquitting Faxon entirely, for our own part we think it a righteous sentence; for it does not appear that the responsibility of the case rested at all upon him, the whole of it being conceded to Hawks. Neither are we disposed to view Hawks' responsibility in a very strong light; for, though it is sufficiently manifest that he did not understand the case, yet his excuse is to be found on a different principle. We are decidedly of opinion, that where the cultivation of anatomy by dissection is put under a legal proscription, and the individual who may unhappily be detected in it, is exposed to the most intolerant persecutions—the general reprobation and detestation of society—heavy pecuniary fines, and long imprisonment—in a few words, where personal estimation, property and liberty, are all lost by it; that a community making such laws and holding such opinions, has neither a collective nor an individual right to punish a surgeon for an ignorance imposed upon him by their own measures. We think that even the grossest mistakes in surgery, under such circumstances, not to say those depending upon intricate derangements of the body, do not render the practitioner justly liable to damages, and we therefore sincerely rejoice at the manner in which the prosecution of Dr. Hawks terminated.

To conclude, it appears to us clear that Dr. Warren has fully exculpated himself from the imputations laid to his charge, to wit:

Wantonly inciting Lowell to a vexatious prosecution of his first surgeons;

Mistaking a fracture of the os innominatum for a luxation of the os femoris;

And in having used means unduly harsh and cruel for the restoration of the latter.

BIBLIOGRAPHICAL NOTICES.

1. *Materia Indica; or, some account of those articles which are employed by the Hindoos and other eastern nations, in their Medicine, Arts, and Agriculture; comprising also Formulæ with practical observations, names of diseases in various eastern languages, and a copious list of Oriental books immediately connected with general science, &c. &c.* By Whitelaw Ainslie, M. D., M. P. A. S. late of the Medical Staff of Southern India. London, 1826. 2 vols. 8vo. pp. 1258.

THIS work may be considered as a second edition of one published in India in 1813, under the title of *Materia Medica of Hindoostan.* The flattering manner in which the first edition was received, and the numerous applications that have been made for it since out of print, have induced the author to republish it, much enlarged, and with a new arrangement.

The first volume is divided into three chapters; the first contains an account of the articles of the British Materia Medica found in India and other eastern countries—their use amongst the native inhabitants, including notices of several articles of diet most proper for the sick and delicate. Chapter second comprises an account of metals and metallic substances found in India and other eastern countries; and chapter third, formulæ, with practical observations.

In the preface to this volume, a table of weights and measures, forms of prescription in use amongst the native medical practitioners, &c. &c. are given.

Dr. Ainslie, in his preliminary observations to the second volume, has entered into the history of Hindoo medicine, and the pathological principles of their doctors. Like the first volume, this is also divided into three chapters; the first contains an account of the medicines in use amongst the Hindoos and other eastern nations; the second, notices and lists of books in various eastern languages connected with medicine and other sciences; and the third, the names of diseases in various eastern languages.

The above brief summary of its contents indicates evidently that the work comprises very various and interesting, and to those who practice in India, highly important information. Its compilation must have cost its author prodigious labour. It can only be looked upon, however, by the practitioners of other countries, or the general reader, as a book of reference.

With its merits, this publication has certainly some faults; but we have not the inclination, nor is it our object, to point them out. We must, however, express our regret, that Dr. A. should have adopted in his Materia Indica the alphabetical arrangement. The information most likely to be sought for, and which would be most interesting, a knowledge of the substances used by the natives as articles of diet, as purgatives, emetics, &c. cannot be obtained without hunting through the whole twelve hundred and fifty pages. This evil might be remedied without altering the arrangement, by giving a list of the articles treated of, classed according to their properties. A supplement of this kind would be a valuable addition to the work.

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2. *An Inaugural Discourse, delivered at the opening of Rutgers Medical College in the city of New York, on Monday the 6th day of November,* 1826. By David Hosack, M. D. F. R. S. President of the Medical Faculty, &c. &c. New York, 1826, pp. 176.

In this discourse, Dr. Hosack, with his wonted vigour and perspicuousness, presents a history of the rise and progress of medical education in New York, and details the circumstances which led to the establishment of the College above named, which we are pleased to learn has thus far met with distinguished approbation and success. A great number of documents are appended, containing, among other interesting particulars, biographical notices of some of the distinguished men who were the first to struggle for the elevation of the medical profession in the state of New York.

The only part of this able discourse to which we can at present advert, is the following declaration, in the correctness of which we believe every candid mind will be disposed to concur.

"I am at this time, gentlemen, induced to repeat the observation which I made upon a former occasion, and which has proved a subject of great annoyance to the envious and the interested; that a great medical school can only exist in a great and populous city. This truth, this axiom, however unpopular and unpalatable it may prove in the western district of our state, or to those who may be connected with the minor medical institutions of other states, the experience of all ages has fully justified. To use the language of my able colleague, Professor Macneven, 'the solid basis of a medical education is not to be obtained in those village schools, recently instituted in our country, where they pretend to teach anatomy and surgery without subjects, and the practice of physic without a patient; but must be laid and can only be laid, amidst the hospitals and dispensaries, the countless accidents, the numberless distempers of the multitudinous city.'"

This declaration, followed by an exposition of a defective system of medical education, has drawn upon Dr. Hosack and his colleagues a torrent of wrathful persecution, in various forms of individual and legislative annoyance. One consolation, however, remains to them, sufficient to outweigh far greater vexations, in the following universal truths; no degree of clamour can impart talent to dulness, nor confer genius upon mediocrity: neither title nor privilege can compensate for lack of learning, experience or skill; nor can any enactment impart to a depreciated currency that value which all men spontaneously accord to precious metals. Θ.

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3. *An Essay on Morbid Sensibility of the Stomach and Bowels, as the proximate cause or characteristic condition of Indigestion, nervous irritability, mental despondency, hypochondriasis, &c. &c. to which are prefixed, Observations on the Diseases and Regimen of Invalids, on their return from Hot and unhealthy Climates.* By James Johnson, M. D. of the Royal College of Physicians, &c. Philadelphia, 1827, pp. 154.

It is, perhaps, almost a work of supererogation to recommend to the profession, the production of an author so well known and duly appreciated as is the editor of our respected cotemporary, the Medico-Chirurgical Review, but we cannot refrain from expressing our obligations to Dr. Johnson for the pleasure and instruction we have received from the perusal of his little essay.

Dr. Johnson classes under the title of "Morbid Sensibility of the Stomach and Bowels," the affections which have by different writers been termed indigestion, dyspepsia, hypochondriasis, bilious disorder, spleen, vapours, melancholy, nervousness, irritability, mental despondency, &c. &c. all of which he is of opinion, depend upon a morbidly sensible condition of the ganglionic nerves supplying the chylopoietic viscera.

Dr. J. divides these affections into two great classes. 1st. That which is accompanied by *conscious sensation*, irritation, pain, or disordered function of the organs of digestion; and 2d, That which is *not* accompanied by any *sensible* disorder of the said organs or their functions. If we are not prepared to go full lengths with Dr. J. in asserting that this latter class of human affections is *infinitely more* prevalent than the former, we do believe it to be equally common and obstinate, and that it has been productive of the most distressing, nay, awful consequences, where its influence was little suspected.

Dr. J. has most graphically delineated the symptoms of the affection under consideration, and although others may think the picture exaggerated, those who have suffered, will bear testimony to its correctness.

The causes of the disease may be divided into physical and moral. Numerous and important as are the former, and we do not undervalue their importance, yet we suspect Dr. J. is not far from being correct in saying, that they dwindle into complete insignificance when compared with the latter.

"The function of digestion, as indeed every function, is so completely under the nervous influence, that there can be no doubt of the channel through which the mischief is produced. Mental anxiety not only arrests or disturbs the digestive process in the stomach, by interrupting or weakening the nervous influence on which it depends, and thereby leaving the materials of food open to the chemical laws that would act on them out of the body; but, in a remarkable manner, vitiates or impairs the biliary secretion, thereby adding a new and powerful source of irritation to the delicate nerves of the duodenum and small intestines. The consequence is, that the whole line of the alimentary canal, from the cardiac orifice to the valve of the colon, is kept in a state of *irritation*, from the time the food is taken in, till its remains pass into the great intestine. This is distinctly felt by the individual, who has no ease either in mind or body, till the process of digestion, such as it is, and of chylification is over, when he feels comparative comfort. The mind and body then seem relieved from a burthen, and a most significant remark is often made by people in this condition, that *if they could live without food they would be well.* Whenever this observation is made, we may rest assured that there is a morbid sensibility established in the nerves of the alimentary canal; and it is two to one that this has been induced by mental anxiety, or, in other words, by moral causes. But, in a great proportion of cases, the *effects* of this morbid sensibility of the stomach and bowels are not distinctly recognized by the individual by pain or uneasiness in the parts themselves, nor by any very morbid state of the evacuations, but in the reaction of the gastric and intestinal irritation on the mental faculties. They notice, therefore, the exasperation of these mental miseries, at certain times, but do not suspect the food and drink as the cause of these exasperations. Hence arises a whole class of maladies, which, as being unattended by any evident disorder of the body, are attributed to the imagination, and the unhappy individual is put down by his friends, and too often by his physician, as a decided HYPOCHONDRIAC."

In the treatment of these affections there is a great error committed every day in flying to medicines at once. More may often be gained by a properly regulated system of diet and exercise, than my medicines. We avoid the details because the book itself should be in the possession of every physician.

Like the author, we can speak feelingly on the subject of which he treats, and we do believe, that his general views are correct, and we can bear unqualified testimony, to the fidelity of his descriptions and the value of his dietetical precepts. There are one or two errors into which writers have so generally fallen, that we may be allowed to notice them. Tea is almost universally proscribed, but when it is allowed, it is recommended that it should be taken with but little milk and sugar. Our experience convinces us that this is a mistake, it is infinitely less injurious with a large, than a small portion of milk and sugar. *Toasted* bread is generally recommended; we have so repeatedly seen it produce oppression and cardialgia, that we are persuaded, that as a general rule it ought not to be allowed. Stale bread is infinitely better, especially the bread made from the unbolted meal, which will in four cases out of five obviate the necessity for any laxative medicine. We are aware that it is impossible to lay down any precise rules for diet, but there are certain articles, the use of which have been so long sanctioned, that no one thinks of questioning the propriety of allowing them, and the patient suffers, without a suspicion existing of the cause.

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4. *Principles of Dental Surgery, exhibiting a new method of treating the diseases of the teeth and gums, especially calculated to promote their health and beauty, accompanied by a general view of the present state of dental surgery, with occasional references to the more prevalent abuses of the art, in two parts.* By Leonard Koecker, Surgeon-Dentist, Doctor in Medicine and Surgery; Member of the Medical and Linnæan Societies, and of the Academy of Natural Sciences of Philadelphia, etc. etc. etc. London, 1826, pp. 445.

Dr. Koecker resided for several years in this city. He was considered one of our most skilful dentists, and enjoyed a large share of business, and we are pleased to learn that he has been equally successful in London. His work contains much interesting, and some novel information, conveyed however in a very loose and verbose style, as might, perhaps be expected, writing as he does in a foreign language with which he is not very intimately acquainted. The influence of diseased or dead teeth, remaining in the sockets, upon the sound teeth, the gums, the nervous system, and the constitution in general, is infinitely greater than is generally supposed, and we entirely agree with Dr. K. that "the immediate connexion of the teeth and the other part of the mouth with the digestive organs and the lungs, renders it probable that the maladies of the teeth may very frequently constitute a considerable part of the exciting causes of primary and secondary derangements of these important parts; while it is also very evident that, in consequence of their close relationship with the brain, the delicate organs of the senses of hearing and of sight, must very often be much impaired, and painfully affected during diseased states of the teeth, gums, alveoli, maxillary bones, and their investing membrane, the periosteum."

The Dentist, and indeed the general practitioner, will derive much information from the perusal of Dr. K.'s book.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

ANATOMY.

1. *Phrenic Hernia.*—In our last number, p. 373, we noticed an instance, recorded by Mr. Sym, in which death was caused by the stomach passing through a preternatural aperture in the diaphragm. In the Journal Complémentaire for October, 1826, a case is related of a young man who died suddenly after indigestion, and upon examination, "Messrs. Guiaud and Magail found a perforation in the left side and the posterior part of the diaphragm: the opening was oval, with rounded edges; its greatest diameter was at least three inches: the efforts to vomit had forced a considerable portion of the intestines through the aperture into the chest."

Mr. Hutchinson in the second edition of his Practical Observations in Surgery, mentions a case in which the colon was found to be strangulated through the diaphragm.

Our friend Dr. John Rhea Barton, of this city, informs us that he witnessed an instance in which the diaphragm appeared to have been ruptured by an accident. A man in a fit of derangement precipitated himself from a third story window, and was brought into the Alms-house in a comatose condition, in which state he continued until his death. On examining his body, in addition to other injuries, there was found a large opening in the diaphragm through which the stomach had passed into the cavity of the thorax, where it lay in contact with the heart and lungs.

2. *Supposed Hermaphroditus.*—"A preparation, in which there were some appearances of this conformation, was lately presented to the Section of Surgery of the French Academy by Mr. Bonnie, and reported upon by Messrs. Réveillé, Parise, Roux, and Moreau. The subject was a child, born of healthy parents, and inscribed, notwithstanding a peculiarity observed in the structure of the genital organs, as a female child in the public registers. At the age of four years, some anomolous circumstances were observed by Mr. Bonnie: the voice was deep, the skin brown, the muscles strongly developed, and the habits of the child those of a boy: the pubes were covered with hair, the labia very large, the clitoris, in its ordinary state, eighteen lines in length, and when erected, nearly two inches: there was also a real perpuce and glans, in the middle of which was a cicatrix, representing the extremity of the urethra, which passage, according to the account of the child's mother, had been obliterated by the introduction of a stilet, by a surgeon, some months after birth. The existence of the meatus urinarius and vagina was ascertained, the diameter of the latter very small. When the body was examined, after

death, there were found to be, a uterus, round ligaments, ovaria, and, in short, all the organs proper to the female. This example adds one to many heretofore recorded, in which the pretended conformation of the hermaphroditus was nothing more than a variety in the structure of the female organs."—(*Lond. Med. Rep. Jan.* 1827.)

3. *Case in which the Gall-bladder was wanting.*—"The subject of this rare deficiency enjoyed perfect health, and died in consequence of a severe fall. The body was opened in the presence of several physicians, and there was found to be no trace of a gall-bladder, or of the cystic duct; the yellow tinge commonly observed on the transverse arch of the colon was not present, nor was such colour observed in the usual situation of the gall-bladder: the hepatic duct was carefully examined, and found to be double the usual size. The possible existence of this peculiarity has with very little reason been denied; for if there had not even been previous instances of it, the use of the gall-bladder certainly does not appear so indispensable to the human body, as that the latter could not be supposed to exist without it. The occasional absence of the gall-bladder was even noticed by the ancients; and many animals are unprovided with it."—(Vide Haller, Lib. xxiii. Sect. 2.)—(*Journ. des Sc. Méd.*)

4. *Fœtus in Fœtu.*—"About eighteen months ago, the daughter of a labourer in the neighbourhood of Braunau, in Austria, was delivered of a male child, the scrotum of which was observed to be considerably tumefied; and this tumefaction increased as the child grew older. The tumour attained the length of five inches, and was two and a half in depth; and, in opposition to those who considered it a hernia, Mr. Fatti laid it open, and discovered the ribs, the vertebral column, the two lower extremities as far as the knees, and the two orbits of a fœtus. These were extracted, the infant bore the operation well, and is likely to live."—(*Bull. des Sc. Méd. Sept.*)

5. *Researches on Congenital conformations.*—Mr. TIEDEMANN has published, in a late number of the German Journal of Physiology, an essay on the laws which preside over the development of organized beings, being the first of a series on that subject. "In order to determine the influence of the nervous system on the development of the other organic systems, he proposes to investigate the following questions:—

"1. When an organ is absent, are its nerves also absent?

"2. When supernumerary exist, is there a corrosponding excess in the number of the nerves; or of the parts of the brain and spinal marrow?

"3. What are the peculiarities of the nervous system which correspond with a sudden stop to the development of organs?

4. Is there any peculiar organization of the nervous system, and particularly of the brain and spinal marrow, which universally corresponds to an anomalous organization of the body in general, or of its individual organs; and what is that peculiar organization?"

"Mr. Tiedemann has collected, in reply to these, a large number of cases from various authors. Of eight, preserved by himself, he has given the particulars.

"Two were instances of congenital division of the soft palate, accompanied by hare-lip. In these the hemispheres of the brain were entirely united anteriorly, having no mark of the usual division; the convolutions passing uninterruptedly, from one side to the other. There was no trace of the olfactory nerves; and in place of the ethmoid bone, was found a cartilaginous mass without any foramina. The thalami were united superiorly, and the fornix was incomplete in its development in the anterior part.

"The following appearances were observed in a still-born child, who had a division of the velum palati, an umbilical hernia, and a supernumerary finger on each hand. Brain forming an entire mass without any division into hemispheres; olfactory nerves, the corpus callosum, the anterior crura of the fornix, the anterior commissure, and the pineal gland entirely wanting; the lateral ventricles formed but a single cavity, uniting in front of the thalami.

"Sœmmering and Rudolphi cite analogous cases. A puppy was born without eyes, the orbits being filled by cellular substance. Two slender filaments, originating from the thalami, and the anterior pair of the tubercula quadrigemina constituted the optic nerves; they passed round the crus cerebri, and terminated without any union, immediately in front of the pituitary gland. The other nerves of the organs of vision were deficient.

"Malacarne, Himley and Schmidt, Orlander and Lobstein, furnish some analogous cases, besides others which are imperfectly described.

"A fœtus was born with but one eye, without a nose or any other part of the olfactory organs, with a supernumerary toe on the left foot, and six fingers on each hand. In lieu of a nose, he had a tube fifteen lines in length, hanging from above one eye; the eye had four lids placed in a quadrangular manner; it was in front oblong horizontally. The brain was a single smooth mass, without hemispheres or convolutions. The olfactory nerves and ethmoid bone were wanting. The optic nerves entered the orbit without any junction. The eye was double at the posterior part.

"In another case, the same external characters were found. In this there was but one eye and one optic nerve, which was formed by the union of filaments from the thalami, and both the corpora quadrigemina. The brain was a single mass, without convolutions, or separation into hemispheres, and was so small, that the cerebellum, corpora quadrigemina, pineal gland, and optic thalami were uncovered posteriorly. The corpora striata, ethmoid bone, os unguis, and os turbinatum inferius were absent.

"Another fœtus, examined by Mr. Tiedemann, presented a truly monstrous conformation. Besides its having but one eye, and the trunk hanging from above, there was a smaller trunk placed below it. There were neither lips, jaws, or mouth, except a small opening, which led to the larynx and œsophagus, and the rudiments of a tongue, two lines long, attached to the os hyoides. The nasal cavities, all the bones and muscles of the face, the masseters, and the salivary glands, were wanting. Where these organs are usually placed, there were found two well formed ears, looking from the sides of the head downwards and forwards; their lobes united near the perforation which was substituted for a mouth. The brain devoid, like that in the preceding case of hemispheric division or convolutions, wanted the pituitary gland, mammillary eminences, and olfactory nerves."—(*Quarterly Review, January*, 1827.)

6. *Want of Pericardium. Repertoire, No.* 1.—In examining a young man aged twenty-eight years, who had died of severe intestinal inflammation, Mr. Breschet observed the following case of congenital malformation:—

"First—The heart wanting its external fibro-serous envelope, was free and floating under the left lung, and appeared to be kept in its situation by two cords, about two inches long, which passed from the left side of the summit of the heart, and seemed to terminate at the circumference of the diaphragm, near its insertion at the base of the thorax.

"Secondly—The mediastinum was formed but of a single lamina, belonging to the right pleura.

"Thirdly—On the left side of the septum there appeared a fibrous bag which lost itself above upon the roots of the heart, and terminated abruptly below, without forming any adhesion to the diaphragm. This capsule appeared to be the rudiment of a pericardium, upon which no doubt could exist from its fibrous nature, its situation, the facility with which it was separated from the left pleura, and its length, which corresponded to that of the heart. The free border of the capsule was smooth, and resembled the border of an opening in an aponeurosis on the edge of one of the valves of the vessels. Above there appeared a thin cylindrical fibrous filament running from the anterior to the posterior border of the capsule, and passing over the base of the heart, without adhering to it. This was considered as a vestige of pericardium.

"Fourthly—The serous membrane of the heart was entirely wanting, and, instead of it, the pleura of the left lung sent a prolongation from the point where it is in immediate connexion with the heart to envelope this latter organ. The heart then had no proper serous covering, but was manifestly indebted for one to the left pleura. On the superior border of the left ventricle, the pleura, in setting out from the lung upon the heart, formed several folds, which presented the appearance of accidental formation, but which in reality belonged to the pleura. But the fibrous coat of the pericardium was altogether absent, with the exception of the simple oval lamina connected with the pleura and the loose filiform band adhering by its two ends. Between the laminæ of pleura which formed the mediastinum and the fibrous lamina which constituted the rudiment of pericardium, the right phrenic nerve was found, whilst the left ran along the free and anterior border of the fibrous capsule, which held the place of pericardium.

"The supposed adhesion of the summit of the heart to the diaphragm by the two small bands above described, constituted the only apparatus, by which the point of the heart was kept *in situ*, and its movements regulated."

The patient had habitually enjoyed good health, and evinced no symptom of any affection of the chest, structural or functional.

7. *Case of Malconformation of the Bladder and the Organs of Generation.* By Henry Vernon, M. D.—"An infant, three days old, was brought to me for examination, by a midwife of this place, having a strange-looking tumour immediately below the umbilicus, and whose organs of generation were in a very defective state. It was a male child, and in other respects fine and healthy looking.

"The tumour at first sight appeared to be of a fungous kind; it had a pear shape, and extended from below the umbilicus to the pubes.

"On a closer examination, however, it was ascertained to be formed of the internal membrane of the bladder, the orifices of the ureters opening into the lower part of it a little distance from each other, from which the urine could be seen trickling down, and soaking quickly the cloths with which its belly was bound. They were sufficiently wide to admit a blunt probe, which could be pushed up nearly three inches towards the pelvis of each kidney. The penis was merely a soft, red, and flat glandular-looking substance, about half an inch in length, with a thick doubling beneath, resembling a prepuce; a furrow ran along its upper surface, into which two orifices opened at about the middle of it, separated by a caruncula. These no doubt were the extremities of the ejaculatory ducts with the *caput gallinaginis*. It appears as if the penis, with its integument dissected off, had undergone a longitudinal section on a level with the urethra. The crura penis could be plainly seen diverging towards the tuberosities of the ischium.

"As the child is still living, and likely for life, I have not had it in my power to examine the state of other parts, as the *vesiculæ seminales*, &c. The testicles have descended into the scrotum.

"The malconformation is one of those in which the anterior half of the bladder is wanting, the posterior and only portion of it being protruded in a globular shape by the intestine situated behind it, and forming a tumour which occupies the room of an equal portion of the abdominal parietes, which are wanting in these cases.

"It would also appear that the penis shared in this sort of deficiency, or the same that would result from a longitudinal section commencing at the fundus of the bladder, and continued to the extremity of the glans penis."—(*Ed. Med. & Surg. Journ. Jan.* 1827.)

8. *Chinese Monster.*—In the 2d vol. of this journal we published an account, by Dr. Livingstone of the British Factory, at Canton, of a Chinese lusus naturæ, (two boys, one without a head, his neck being attached to the sternum of the other,) and in the 3d vol. a very minute description of it, by Dr. J. K. Mitchell of this city, who saw the monster. Numerous models of this lusus have been brought to this country, and we learn from the Lond. Med. Rep. that one was in August last, presented to the French Academy. The respectable editors of the Repository, express their doubts respecting the existence of this lusus. These doubts are wholly unfounded. The monster was seen by many persons with whom we have conversed, and whose veracity cannot be called in question.

PHYSIOLOGY.

9. *Experiments upon the time required for substances introduced into the animal system, to be discovered in the urine.* By Dr. G. A. Stehberger.—The object of these experiments is to ascertain what substances, introduced into the stomach or applied to the skin, are discoverable in the urine, and the time required for their passage. The experiments were made upon a boy of thirteen years of age, who was afflicted with a congenital prolapsus of the bladder, a subject peculiarly favourable for such an investigation, because the urine, which continually passed from the ureters, could be collected and examined every minute.

Most of the experiments were made in the morning, fasting, in a room, the ordinary temperature of which was 56° F. This urine was always examined previous to giving any particular substance, for the purpose of comparing it with what came away afterwards.

The experiments, all of which were witnessed by professor Tiedemann, were twenty-five in number; we shall give only the results. Of the substances introduced into the stomach, the following were manifested in the urine: the colouring principles of rhubarb, of black cherries, of madder, of bilberries, of campeachy wood, of indigo, of cassia; gallic acid, the astringent principle of uva ursi, the cyanuret of potassium and iron, and one of the constituent principles of the inspissated juice of the elder.

"The colouring principle of turnsole, the bitter principle of quassia, the acetate of iron, &c., were not found in the urine, though introduced into the stomach.

"Among the substances employed in the bath by fomentations and frictions on the skin, the oil of turpentine and acetate of potash only were discovered in the urine. The oil of turpentine was found also when it had been inspired.

"With respect to the time required for the passage of substances from the stomach to the urine, great differences exist; some being very quickly discoverable, and others only after the lapse of a considerable time. They may be ranged in the following order:—madder appeared in about fifteen minutes, indigo fifteen, rhubarb twenty, gallic acid twenty, decoction of campeachy wood twenty-five, colouring matter of bilberries thirty, colouring matter of cherries forty-five, astringent principle of uva ursi forty-five, cassia pulp fifty-five, cyanuret of iron and potash sixty, elder juice seventy-five.

"Turpentine inspired, was exhibited in the urine in a quarter of an hour; rubbed upon the skin, twenty-five minutes past before it was perceptible.

"Excepting cassia pulp and gallic acid, all these substances disappeared from the urine in a few hours, varying from three to nine. The gallic acid continued perceptible for eleven hours, and the cassia pulp for twenty-four.

"Dr. Stehberger deduces from these experiments the great importance of the kidneys as assimilating organs. 'Different substances absorbed in the stomach, in the intestinal canal, or by the skin, are received into the mass of the blood, but not being capable of assimilation, are separated from that fluid by the labour of the kidneys, which thus powerfully contribute to the maintenance of the proper chemical composition of the blood.' "—(*Journal Complémentaire for October*, 1826.)

10. *Instance in which the Cremaster muscles were under the influence of the will.*—Mr. Hutchinson, in his recent work, (Practical Observations on Surgery, &c. 2d edition, p. 187,) details a case of a sailor, who displayed several remarkable feats of the power he possessed over his testicles. "He pulled both testes from the bottom of the scrotum up to the external abdominal rings, with considerable force, and again dropped them into their proper places, with incredible facility. He then pulled up one testes, and after some pause the other followed, as the word of command was given. He then pulled one gradually up, whilst the other was as gently descending; and he repeated this latter experiment as rapidly as the eye could follow the elevation and descent of the organs."

11. *Remarkable effect of different preparations of Opium.*—In the Archives Générales de Medicine, for Dec. 1826, a case is related of a lady of nervous temperament, who, on taking a draught in which there was half a grain of acetate of morphium, suddenly sank into a state of syncope, which continued for two or three hours. It was attended, however, with this peculiarity, that she understood perfectly what was passing around her, but had no power either of speaking or making the least movement. On a subsequent occasion, a pill containing a grain of calomel and a quarter of a grain of opium, was given her at night on going to bed, and

she slept very soundly; but, on taking another the next day, half an hour had scarcely elapsed, before syncope, presenting precisely the same symptoms as in the former attack, occurred, and continued for three hours. The day after, unknown to the patient, half a grain of acetate of morphium was put into a five ounce mixture, and scarcely had she taken a spoonful before the head-ache began, and, to a certain degree, the other symptoms.

Dr. Dewees met with one instance in which opium invariably purged; and he was in the habit of employing it as a purgative in this case, in doses of two grains, purgatives not producing their usual effect. He has also met with one instance in which opium always excited violent coughing, even when administered in enema.

12. *Deficient Bony union.*—In the December number of the Lond. Med. and Phys. Journ. Mr. Mayo has offered some interesting observations on the want of bony union in cases of fracture of the neck of the thigh-bone within the capsular membrane. Mr. M. is of opinion that the want of bony union in these cases is owing to the complete isolation of the fracture, by means of the synovial and capsular membranes, so that the adjacent textures, which are important agents in repairing other fractures, cannot contribute any thing to the reparation of these. In confirmation of this opinion, he gives the following result of his experiments and dissections on the reunion of bone.

"In simple fracture, the appearances noticed during the first sixty hours are limited to the immediate effects of the injury. An inconsiderable quantity of blood is found effused into the exposed cancelli, and into the neighbouring cellular texture; and the periosteum is seen to be stripped irregularly from the margin of the broken surfaces.

"About the fourth day, all the parts surrounding the fracture become thickened and hardened; the cellular substance, the muscular and tendinous fibre, become condensed, so as to form a tough capsule, which contains, and holds in some degree of apposition, the extremities of the broken bone.

"The ends of the bone become united by soft substance, which consists in part of the organised clot, if there be any—in part of lymph effused around the ends of the bone,—in part of a growth from the surface of the investing capsule.

"The capsule becomes cartilaginous, and at length ossifies; the muscular and tendinous fibres, which were at first included in it, becoming at the same time distinct and disengaged upon its surface. This change takes place between the third and sixth week.

"As yet there is no bony union between the fractured surfaces. The soft substance, by which they are connected, ossifies subsequently, and, as it would appear, through an extension of that process from the bony capsule. The ossification of the intermediate substance takes place between the sixth week and the fifth or sixth month.

"In proportion as the intermediate substance becomes ossified, the capsule, or thickening round the united bone, is gradually absorbed."

PATHOLOGY.

13. Mac Andrew's *Case of Induration of the Cellular Membrane in a Child.*—In the London Med. and Phys. Journal, for Feb. 1827, a case of

this uncommon disease is recorded. It occurred in a child aged eighteen months, a patient at the South London Dispensary. Its feet, legs, and thighs, were much enlarged, in consequence of a diffused swelling that rendered the skin very tense. The skin had a wax-like appearance, and was nearly colourless, excepting for about two inches in the middle of the left leg, where it had a livid colour. "Some degree of livor is also observable on the thighs. The swelling does not pit, although firmly pressed by the fingers; nor did the pressure appear to occasion any pain, except on the discoloured part of the left leg. All the affected parts felt cold to the touch. The penis was much distended, but not livid. The abdomen was neither swollen nor hard; the rest of the body was emaciated. He had nearly twelve stools daily: they were of a yellow colour, sometimes greenish; very liquid, and occasionally squirted out to a considerable distance. He appeared to be pained before having an evacuation. He made water freely, took the breast readily enough, but refused other nourishment."

He was attacked two months previous to his admission in the Dispensary, with feverishness and restlessness, and soon afterwards he became affected with a looseness of the bowels, and a swelling of the lower extremities, which complaint had never left him. The usual remedies were prescribed, but the diarrhœa continued and destroyed the patient. On examination, as may be supposed, marks of inflammation were found in the intestines, but it was in the extremities that the most interesting appearances were observed. "The cellular membrane of the left leg was much thickened, more than a quarter of an inch in depth, of a light red colour, very dense, and not yielding to pressure; it had a distinct granular appearance, was not unlike a portion of hepatised lung. Immediately below this indurated membrane, there was a layer of gelatinous looking substance, of about two lines in thickness, which, when cut into, allowed a thin fluid to escape. This change of structure was observed over the whole left leg, and also prevailed to a certain extent in the thigh and leg of the right side. A puncture made in the foot allowed a few drops of fluid to escape, on firm pressure being applied. The muscles of the leg were perfectly healthy."

14. Brodie's *Case, in which the tunica vaginalis was divided by adhesion into two parts, in one of which was a collection of a peculiar fluid. London Med. and Phys. Journ. Dec.* 1826.—In this case "there was an adhesion of the opposite surfaces of the tunica vaginalis, below the epididymis and nearly parallel to it, by which the cavity formed by that membrane was divided into two parts. That part which belonged to the testicle was lubricated by a little moisture, as usual; while that which corresponded to the epididymis was distended with about a quarter of an ounce of fluid. The fluid was of a dingy yellow colour, wholly different from pus, and depositing its colouring matter in the form of a yellow sediment, when allowed to remain at rest. The tunica vaginalis bore no marks of inflammation."

15. *Examination of the body of the celebrated Talma.*—"The disease of this very admirable actor and excellent man appears to have been very obscure, and to have given rise to much controversy respecting its nature. Some (*physiologistes à outrance*) ultra physiologists attributed all his symptoms to a gastro-enteritis; others, with much more reason, considered that the nausea, vomiting, swelling, and sensibility of the abdomen, proceeded from some obstruction in the course of the intestinal canal, and feared that the obstruction was insurmountable. The examination

was made by Mr. Breschet, in the presence of Messrs. Biett, Dupuytren, Tonquier, Broussais, Bourdois de la Motte, &c. and fully corroborated the latter opinion. There was a cellulo-fibrous contraction of the rectum, with complete obliteration of the tube, about six inches above the rectum. The intestine, enormously distended above the contraction, was gangrenous, and a perforation existed at the anterior part, through which fæculent matter had escaped. The whole intestinal canal was distended with gas and 'matières.' There was some redness on the external and internal coats of the small intestine and stomach; the latter was empty and collapsed. The organic lesion had originated long before the disease which induced death: for though Talma had appeared to enjoy good health, he had for many years experienced pain in evacuating the rectum. Often when he imagined himself to have had a copious dejection, it was found, on examination, that gas, with a little liquid matter, only had escaped.

"Another circumstance was observed, well worthy of remark, viz. an aneurismal tumour at the apex of the heart. This tumour, black and filled with layers of concrete fibrine, had been formed by successive infiltration of blood across the fibres of the left ventricle, which was extraordinarily altered and thinned. It was the size of a pigeon's egg, its parietes were formed by some of the atrophied muscular fibres, and by the serous membrane of the pericardium, the two layers of which adhered to each other. The internal lining of the heart had been unquestionably burst or eroded at the correspondent point.

"The editor of the Nouvelle Bibliothèque Médicale appears to regret that Talma had not died upon the stage from the bursting of this tumour, as then it might have been said, 'Talma, comme Molière, eût expiré sur *le théâtre* de sa gloire.' The mere supposition, however, has given the editor an opportunity of rounding a sentence, and this perhaps may satisfy him. It does not appear that any suspicion of such a disease existing had been entertained during life."—*Lond. Med. Repos. Dec.* 1826.

16. *Louis on Abscesses of the Liver. Repertoire, No.* 2.—It has been questioned by many physicians whether an abscess, containing laudable pus, could occur in the parenchymatous structure of the liver, or only in the cellular membrane, between its peritoneal covering and glandular texture. In four hundred and thirty dissections, where every organ of the body was accurately examined, Mr. Louis found five examples of purulent abscess in the *substance* of the liver, and not one in the coverings.

MATERIA MEDICA.

17. *Application and management of Blisters.*—It has been demonstrated by Mr. Robiquet, that the vesicating principle of cantharides is very soluble in fatty bodies, (corps gras.) Mr. Bretonneau has, in consequence, been induced to employ blisters slightly moistened with oil; and he says that he "soon found that by this means their action was rendered more prompt, more energetic, and not sensibly diminished, even by the interposition of a covering of paper, which is easily penetrated by the active principle of the solution." This mode of application gives the physician, Mr. B. thinks, greater control over the remedy. "The epidermis not being in contact either with the powder of cantharides or with the plaster, is left free, and does not adhere inconveniently when we wish to re-

move the blister. It is thus easy to prevent the redness of the true skin, avoiding on the one hand the influence of the air, and on the other the prolonged action of particles of the vesicating substance, which, in the ordinary method, are so difficult to remove."

"It is necessary carefully to avoid employing too great a portion of oil, which, by running over the skin, may occasion a subsequent and more extensive vesication. In ordinary cases, six or seven hours suffice to produce a decided effect. Indeed, when we wish strictly to limit the action of the blister to a simple vesication, we must not wait for the separation of the epidermis before removing the blister; for if the surface is only wrinkled, the process will be continued afterwards." Mr. B. says, that in six years, during which he has been in the habit of pursuing the above method at the general hospital, the most extensive vesications thus produced have not in a single instance produced ischuria.

18. *On the diuretic properties of the Equisetum.* (*Beobachtungen und Abhandlungen, von Oesterreicheschen Aerzten,* vol. v.)—The various species of the Equisetum have been recommended by Professor LENHOSSEK of Vienna as a very powerful and specific diuretic, which neither oppresses the digestive organs, nor induces any bad consequences in the vascular or nervous systems, and is therefore preferable to squill, digitalis, colchicum, and other diuretic remedies, whose unpleasant consequences are too well known. It is particularly serviceable in serous accumulations from debility, or after exanthematic fevers, and is contraindicated in inflammatory states of the system. All the species of *equisetum* possess a directly diuretic virtue; the *arvense*, *variegatum*, *ramosum*, and *palustre*, act more mildly, but the *hyemale* and *limosum* act more powerfully, and are more apt to induce bloody urine. The dry plant is also preferable to the recent, which is more active. It has been sometimes given in powder, but the decoction answers well in every case, as it is not offensive either in smell or taste, and children take it readily when sweetened. Two or three drachms of the dried herb are to be boiled in a pint of spring or river water for a quarter of an hour, and of the decoction a spoonful or two may be given to children, according to their age, and adults may take half a cupful, or a whole cupful, every two hours, until the flow of urine be increased.—*Edin. Med. and Surg. Journ. Jan.* 1827.

19. *Moxa.*—We extract from the recent interesting work[*] of Mr. WALLACE, the following directions for the application of the moxa. We are quite sure that this application has been too much neglected. It is a powerful remedy, and has unquestionably, in some instances, been productive of unequivocal advantage. Dr. Physick mentioned to us some time ago, that he had completely relieved a patient who was so amaurotic that she could not distinguish the sun at midday, by the use of this remedy.

"The moxa should be applied in painful affections to the point where the greatest distress is felt, if it be possible so to do; and in paralytic affections, it should be first applied over the origin of the nerves which lead to the diseased parts, and afterwards along the same nerves in different parts of their course.

"The size of the moxa, the manner in which it should be applied, and the length of time it should be allowed to remain on the part, are points of some importance. All these circumstances must be regulated by the depth of the disease, and the nature of the parts to which we may wish to apply it. It may be used so as not to cause any injury of texture; in a greater degree so as to produce vesication; and in a still greater degree an eschar, and the eschar may be either deep or superficial; or, lastly, it may be employed in conjunction with the acupuncture needle. These different modes of using the moxa may be distinguished by the terms, first, second, third, fourth, and fifth forms of application.

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[*] A physiological inquiry respecting the action of moxa, and its utility in inveterate cases of sciatica, lumbago, paraplegia, epilepsy, and some other painful paralytic and spasmodic diseases of the nerves and muscles, by William Wallace, M. R. J. A. surgeon to the Charitable Infirmary of Dublin.

"The first form of application will answer when the disease is very superficial. It constitutes the objective cautery of the French writers, and is highly extolled by *Faure* in the Mémoires de l'Académie Royale de Chirurgie, tom. xv. 12mo. as a powerful remedy for the cure of ulcers. It may be serviceable in neuralgia when the nerve is very superficial; or in affections of the joints, when the synovial membrane is immediately under the integuments, as is the case in the knee and wrist. When used, it should be repeated at least once a day, and applied by holding the moxa in the forceps, as close to the part as the patient can comfortably bear; at the same time it should be moved slowly over the surface, backwards and forwards, until its combustion has terminated.

"I seldom have recourse to the second form of application, because it is not so effectual as the third, and it is more troublesome in its after treatment. It may, however, be usefully employed in tic douloureux, and to those parts on which the patient would not wish a cicatrix to be formed. In such cases the moxa is applied by holding it steadily, and as close as possible to the skin without allowing it to touch it, and until the skin appears white, which appearance is owing to the detachment of the cuticle, and the formation of a blister.

"In a large proportion of cases the superficial eschar will be the best form of application. To produce this eschar the moxa must be placed on the skin, and allowed to remain on until the skin appears brown under it, which will in general be found to take place when the combustion of the moxa has extended to the distance of about a line from the skin.

"The deep eschar will be required when the seat of the disease is far removed from the surface, as in affections of the spinal marrow and of the hip. To form this eschar the moxa must be allowed to remain on until its combustion is complete, when the part upon which it was seated will be found black, and the surrounding skin slightly red and wrinkled. In this form of application it will be sometimes useful to increase the intensity of the heat by the employment of the blow-pipe; and when this is thought prudent, the moxa should be, previously to its application, surrounded by a cylinder of card-paper, which will have the effect of directing the current of heat downwards, and prevent its escape laterally.

"When the moxa and acupuncture needle are used in conjunction, the following is the mode of operating:—I perforate a moxa of a proper size by a needle of such a length as will be sufficient to reach the seat of disease, and at the same time extend so far beyond the surface of the skin as to keep the moxa about one inch from it, or so far as to secure the texture of the skin from injury. The needle is then introduced as far as the seat of disease by the assistance of the port-aiguille, and as soon as it has been introduced the port-aiguille is removed, the needle being left in the part. The moxa, which had been previously perforated, should be now placed in a state of combustion on that end of the needle which projects beyond the surface of the skin, and allowed to burn round the needle by which it is thus transfixed. The heat disengaged from the moxa is communicated to the needle, and thence conveyed to the seat of disease. When the needle has cooled, it is removed, and the wound or eschar produced by it is scarcely observable. I have also employed with remarkable efficacy the preceding mode of using the moxa in cases which required the intense application of this remedy, but in which the texture of the skin could not be injured, nor an eschar with propriety formed.

"It is recommended by Larrey, that immediately after the application of the moxa the skin should be wet with the water of ammonia, and this for the express purpose of preventing the occurrence of inflammation: the very effect which those who do not understand the mode of action of moxa are desirous of producing! Upon what principle the Baron expected such a result from the application of ammonia, I know not; for he has not made any remark upon the mode of action of this application. Its effects are, however, such as he states, and clearly explicable, as will hereafter be proved, on sound physiological ground: it will, however, answer the same purpose to apply any other powerful stimulus. Alcohol, æther, turpentine, or ammonia, may be indiscriminately used; or even bruised garlic, which Ten Rhyne recommends in his work de Arthritide. The neatest mode of applying the water of ammonia, alcohol, &c. is by a glass tube. The fluid ascends in the tube as soon as it is placed in the bottle containing it. The operator should then put his thumb on the end of the tube while he lifts it from the bottle, and thus retains in the tube a sufficient quantity of the fluid, which he can then allow to drop on the surface of the skin as he pleases. I may here mention, that I have found tubes of this kind extremely useful for the purpose of dropping fluids into the eye."—*Lond. Med. Rep. Feb.* 1827.

THERAPEUTICS.

20. *Ammoniated Tincture of Guaiacum in Amenorrhœa.*—It is now seven and thirty years since the ammoniated tincture of guaiacum was first used by one of the editors of this Journal, (Professor Dewees,) in Amenorrhœa. Since that period he has employed it in a vast number of cases, and with as uniform success as has ever attended the use of any remedy in any disease. We are pleased to learn from a communication in our valued cotemporary, the Lond. Med. and Phys. Journ. that this remedy has lately been used by Mr. Jewel, surgeon to the Middlesex Infirmary, who remarks, "in the administration of this medicine, it is but justice to state, that I have experienced that, which in common we experience from all—occasional disappointment, at the same time, I conceive there is no medicine whose effects are more certain, provided the catamenial suppression does not exist as a consequence of any organic disease."

In a note the editor, Dr. Macleod, informs us that he also has been, during the last two years, in the habit of employing the medicine, "and in general with very satisfactory results."

Mr. Jewel points out the importance of preparing the system for the remedy, in the same manner as has been directed by Dr. Dewees.

Dr. Dewees has been in the habit, for a long period, of using this preparation, as a diuretic also, in dropsy, and with the most eminent success.

21. *External Application of the Deuto-Ioduret of Mercury. Nouvelle Bibliothèque Médicale, Dec.* 1826.—Mr. Paillard informs us, that Mr. Biett, physician to the hospital of Saint Louis, has employed this preparation

with advantage, in syphilitic swellings of the lymphatic glands, and in venereal and scrofulous ulcerations, the healing of which it remarkably accelerates. Mr. Paillard has used it in old and obstinate eruptions, and with favourable results. Mr. Biett has employed it as an external application only, and for the purpose of establishing some change in the mode of irritation in the affected parts. It acts as a caustic. It may be applied either in alcoholic solution, in æther, or combined with lard, or in simple suspension in oil; with lard and oil, it may be mixed in various quantities. Mr. B. recommends the following combination—

℞. Deuto-Ioduret Hydrar. gr. xv.
Axungiæ ℥ij.
Ess. Bergam. gutt. xx.

Sometimes a sudden salivation has ensued after the application of the deuto-ioduret of mercury to the cheeks or lips. Mr. Maury has seen two cases in his private practice.

Fever, colic, and simple or sanguineous diarrhœa, are sometimes produced by this preparation.

22. *Nitrate of Potash in Hæmoptisis.*—We learn from Mr. Martinet's report of diseases at the Hôtel-Dieu, in the clinical wards of Mr. Recamier, that "several patients affected with recent hæmoptysis were treated with nitrate of potash, either alone, or given with conserve of roses. The dose employed was from a drachm to half an ounce; and given in this quantity, it produced neither colic nor diarrhœa; the patients merely complained of an acrid taste, and a sense of heat in the throat: the urine was increased in quantity, and the hæmoptysis completely disappeared in a few days. In one patient, who had every symptom of the first stage of phthisis, the spitting of blood disappeared, and was renewed several times: in this case, although the nitrate of potash was given at first in the dose of half an ounce, mixed with syrup and mucilage, the patient experienced no inconvenience from it."

We have repeatedly employed large doses of this medicine in hæmoptysis and with unequivocal advantage; we have found, however, that one drachm was as large a dose as patients could usually take; this quantity may be repeated three or four times a day; an eighth or a sixth of a grain of tartar emetic may be added to each dose with advantage. We cannot too highly recommend as an adjuvant, the application to the chest of Jenner's tartar emetic ointment.

23. *Subcarbonate of Iron in Neuralgia.*—Dr. Euparque has related in the July number of the Bibliothèque Médicale, a number of cases of neuralgiæ, treated with success by the carbonate of iron. It is not a little singular that this remedy, which appears to produce such beneficial effects in neuralgia, both in England and France, should be wholly inert in this country, and that this is the case we have strong evidence. For ourselves we have never seen it productive of the slightest benefit.

24. *Incontinence of Urine.*—"Mr. Lair proposes, in cases where this affection is occasioned by atony of the neck of the bladder, that an attempt should be made to stimulate it by the direct and momentary introduction of the tincture of cantharides, by means of a sound. He reports that he has been in this manner successful in three cases."—*Biblioth. Méd.*

25. Mr. Bell *on Hyosciamus and Camphor in affections of the bladder and urethra.*—"Camphor has long been known to have a peculiarly sedative ef-

fect on the urinary organs, and hyoscyamus is every day coming more and more into use, as a substitute for opium, in almost every kind of irritation and irritability. Mr. Bell remarks that camphor must be given in large doses, and frequently repeated—nor can we be assured that the system is under its influence, until the pulse be more or less affected—or even a slight degree of vertigo produced. Mr. Bell has found it necessary, in a few cases, to continue the employment of camphor, where the chordée, ardor urinæ, and irritable bladder, were in a high degree, even after the vertigo had taken place. But such is only necessary in extreme cases. Camphor, when given alone, is very apt to occasion nausea, heart-burn, and sometimes tremors. An anodyne, therefore, which does not occasion constipation, is a necessary adjunct. Hyoscyamus has been found to answer the purpose well, especially in the form of extract. The following are the formulæ which Mr. Bell generally uses.

1. R. Gum. camphoræ, gr. iij.
Ext. hyoscyami, gr. ij. Misce ft. pilula.
2. R. Gum. camphoræ,
Ext. hyoscyami, aa gr. ij.
Pulv. capsici, gr. i. Ft. pilula.

No. 3 is a grain of ipecacuan instead of the capsicum. In general we find that Mr. Bell gives the above quantity, every third, fourth, or sixth hour, according to circumstances. The object is, to allay local irritation, without occasioning constitutional disturbance. In many instances the discharge of gonorrhœa ceases during the exhibition of the medicine, but this is not the object of the remedy—that object being to allay the distressing ardor urinæ and chordée."—*Med. Chir. Rev. Jan.* 1827.

26. JULES CLOQUET, *on the employment of acetate of ammonia in cases of difficult menstruation.*—"Mademoiselle—, of a nervous temperament, had experienced for seven or eight years very violent menstrual pains for several hours before the catamenia flowed freely. The pains, at first dull, gradually increased in severity, till the patient rolled upon her bed in agony, with a pale and agitated countenance. She had sought for relief in vain from many medical men. At length, having learned, towards the middle of last August, the success obtained in a case of this kind by Professor Mazuyer of Strasbourg, by the acetate of ammonia, I gave this patient, who had for some hours been suffering extreme pain, fifty drops of the acetate of ammonia in two doses, and with half an hour's interval between each dose. It was given in a glass of sugar and water. Immediately after taking the first dose, the pains were alleviated, and upon the second, entirely disappeared, the catamenia being established. Being unwilling to conclude any thing from this fact, because she suffered for some hours, and because they might have been overcome sooner than usual by the spontaneous flow of the menses, I waited till the next period, with the determination of administering it at the very commencement of the pains. As soon as, therefore, the pains began this time, Mademoiselle took thirty-six drops of the acetate of ammonia in a glass of sugar and water, and the pains, instead of increasing, were very sensibly diminished. In half an hour, as she had still a slight feeling of uneasiness, she took another dose, and became perfectly easy; for the first time the catamenia flowed without being preceded by any violent pain, and she walked out two hours after."—*Lond. Med. Rep. from the Archives Générales de Médecine,* *Dec.* 1826.

27. *Bronchocele.*—Dr. Valentin, in his Voyage en Italie fait en l'année 1820, informs us that Quadri and his followers have abandoned the use of the seton in bronchocele. Iodine is entirely trusted to for its cure.

28. *Cold Water in Tic Douloureux.*—"Dr. Bird, in one of the German Journals, relates a case of a lady, whose sister had fallen a sacrifice to the agonies of tic douloureux, was herself, six weeks after her first lying in, seized most severely with this disease. Many physicians, and of course many remedies, were tried, but in vain, till Dr. Bird suggested the application of compresses dipped in cold water, and applied to the pained part. This immediately had the desired effect, and always afterwards relieved her in future attacks!"—*Lond. Med. and Phys. Journ. Jan.* 1827.

29. *Diabetes Mellitus.*—"Dr. Bardsley, of Manchester, has lately detailed, with great minuteness, a rather interesting case of this disease. The patient was a weaver, thirty-eight years of age, who was admitted into the infirmary making at the rate of nineteen pints of sweet urine in the twenty-four hours. It was attended with the usual symptoms—dry skin, voracious appetite, thirst, pain and weakness in the loins, spongy ulcerated gums, constipated bowels, &c. He was put upon a strictly animal food diet, with drink containing the nitric acid. Leeches were also applied to the loins. By this plan the symptoms were much relieved, and the urine diminished to five or six pints per diem. He thought himself so well that he requested to leave the hospital. In the course of a few months he relapsed, not being able to procure a sufficient supply of animal food. The bleeding plan was then put in force, and a fair trial given to it, but it completely failed. Then Dr. Bardsley had recourse to opium, a grain of which was given three times a day, the diet being the usual run of the house. This also failed. The original plan of animal food diet was accordingly resumed, and steadily persevered in, till the urine was reduced to five or six pints, with very little saccharine quality, and he was ultimately discharged, apparently cured. He returned several times afterwards to make report of his continuance of health.

"As far as one case goes, this affords satisfactory evidence of the superiority of the animal food regimen over the other plans of treatment mentioned above. Where there is no unsound organ, as the lungs, we shall occasionally succeed in curing diabetes; but unfortunately it does not often happen that such uncomplicated cases present themselves to our notice."—*Ed. Journ. Med. Science.*

OPHTHALMOLOGY.

30. *Amaurosis.*—"Mr. Magendie has been led, from the results of several experiments, to form the opinion that the integrity of the fifth cerebral nerve is requisite to perfect vision, and hence he has sought for the cause of some of the varieties of amaurosis in the affections of this nerve, and has directed his remedies to its branches in the neighbourhood of the orbit. Acupuncturation and galvanism have been applied by him with this view. He had first, by experiments on animals, come to the conclusion that nerves may be penetrated by needles without any injurious consequences. Acupuncturation was then employed in a young man who had amaurosis; a steel needle being passed through the frontal

nerve. The patient immediately experienced a prickling sensation in all the extremities of the nerves. The infra-orbitary nerve was next perforated; and the same effects produced. The lacrymal branch of this nerve was also punctured, on which a singular sensation was immediately felt in the orbit, and there was a copious flow of tears. The amaurosis was not removed, or even lessened, by this treatment. Needles were then thrust into the frontal and infra-orbitary nerves, and a galvanic circle was formed, the needles being connected with the opposite poles of a voltaic pile. Whenever the galvanic circle was formed, the patient experienced a painful excitement in the course of the nerves; the pupil also contracted, and the light was more clearly perceived. After fifteen days of this treatment, the pupil assumed its usual size, and the amaurosis was diminished. The future progress of the case is unknown, as the patient soon after left Paris; but Mr. Majendie has applied the same treatment to patients in whom the amaurosis was not so complete, and it has been attended with very general success. In one instance of amaurosis in which there was palsy of the upper eyelid and of some of the muscles of the eye, the disease was perfectly removed in three months. He assures us that this mode of treatment of amaurosis is never attended with inconvenience or danger.—*Quarterly Med. Rev. Jan.* 1827.

31. *On the use of Polygala Senega in Ophthalmia. Heidelberger Klinische Annalen.*—We have been aware for some time, that the Polygala Senega was used in Germany with supposed advantage in certain cases of ophthalmia, but have been prevented testing its efficacy by clinical experiments, not having been able to ascertain the mode of exhibiting it, or the cases to which it is applicable. We learn from a late journal that the root is used both in decoction and powder; the latter is said to be the most efficacious: it is made into pills with soap, and from half a drachm to a drachm taken daily. Its effects are stated by Dr. Ammon to be marked in all inflammations of the membranes of the eye which threaten to end in, or which have already produced some morbid secretion. Its action he considers to be either curative or prophylactic; that it either prevents an impending diseased secretion or arrests its progress; and that it is indicated in all cases of ophthalmia which readily assume the character of chemosis, or which produce suppuration of the sclerotic and of the cornea; and even in those which, affecting the deeper-seated membranes of the globe of the eye, may produce suppurations yet more dangerous. Six cases are given in illustration of the practice. The first a case of "rheumatic catarrhal" inflammation; the second one of hypopion caused by a blow; the pus filled half the anterior chamber; the third a case of iritis with hypopion; the fourth and fifth cases of scrofulous ophthalmia, all successfully treated by the remedy under consideration. The sixth is not the least remarkable case; it records the "cure of two pterygia in a woman of seventy-five, obtained at the end of a month by the internal use of polygala." We propose trying the remedy, and will communicate the results.

32. *Fistula Lachrymalis.*—"Mr. Lisfranc considers fistula lachrymalis as proceeding, in the majority of cases, from an acute or chronic inflammation of the mucous membrane that lines the nasal canal; and that there is a strict analogy between the diseases of this membrane and those of the conjunctiva—consequently, that the treatment ought to be similar. He also regards leeches as stimulants when applied in small numbers, and as contra-stimulants when numerously used. The following case is

favourable to Mr. Lisfranc's mode of treatment:—'Lombarre, aged forty-five years, was seized with *un larmoiement*, an escape of tears from the left eye, in 1814, in consequence of ophthalmia. A small tumour, formed at the inner angle of the eye, disappeared, and fistula lachrymalis was established. On the 23d of August, 1822, this patient entered La Pitié. At the internal angle of the eye there was inflammation of the conjunctiva. He was immediately bled from the arm, forty leeches applied to the mastoid apophysis corresponding to the fistula, and emollient fumigations directed to the nose.—24th. The inflammation remains, but in a less degree; twenty-five leeches are again applied to the left temple; the fumigations are continued, and the same regimen.—25th. The inflammatory symptoms have disappeared; the escape of the tears is less; the same treatment.—26th. A more liberal diet allowed.—27th. The tears began to escape by the inferior orifice of the nasal canal; and the cure was complete on the 30th.—On the 5th of September a small tumour appeared in the situation of the cicatrix, which at first made us suspect the cure to be incomplete. A puncture was made in the abscess, which furnished a small quantity of well-secreted pus, but no tears. It quickly healed; and he was dismissed perfectly cured on the 7th of September.' "—*Lond. Med. Repos. from Revue Médicale, Oct.* 1826.

33. *Ectropium of the external Angle of the Eye, cured by a new Operation. By Professor* Walther. *Journal der Chirurgie und Augen-Heilkunde, band.* 9, *heft.* 1, *b.* 87.—"An hussar officer, a healthy young man, was wounded near the temple of the left side. The wound shortly healed; but a portion of the skin, and of the orbicular muscle of the eye, was lost; there remained also a projecting and unequal scar. The external angle of the eye was drawn towards the temple, about six lines from its natural position; its angular form was lost, and it had now a roundish shape. When the patient applied to Professor Walther, the deformity was considerable, and he experienced also a painful sense of tightness and extension in the temple. He could not perfectly close the eyelids: when he attempted to do so, the middle and internal angle of the lids were brought into a state of apposition, but from the middle to the external angle a division remained. The free use of the eye was also interrupted.

"It had been proposed by other surgeons to divide the cicatrix, probably with the expectation of relieving the contraction, which had previously occurred during the healing of the wound. This plan was opposed by Walther: he proposed to unite the eyelids together, beginning at a certain distance from the external angle, so as to form a new angle in the natural position. It was a question, however, how far the growth of the eyelashes subsequently to the operation, even if they were removed before it, might prevent the union of the parts. It was to be feared, also, that some obstruction to the healing of the parts might arise from the secretion from the Meibomian glands, when the openings of their excretory ducts were removed. The day before the operation, the ciliæ of both eyelids were removed, by means of a pair of tweezers, as far as it was intended to attempt to unite the parts. The operation was thus performed:—

"The tarsus of the under eyelid was drawn out by a pair of forceps, and about one-third of its length removed by a steady sweep of a probe-pointed bistoury with a small blade; the incision being extended about one line beyond the external angle. The same portion of the upper eyelid was removed in a similar manner. The two incisions terminated in an acute angle towards the temple. The hæmorrhage was trifling. The parts were brought together by two ligatures, which were introduced through the entire substance of the upper and under eyelids, at the distance of about one line from the incised margin. Between the ligatures, which were applied near the two extremities of the wound, the parts were closed by a strip of adhesive plaster. The edges of the wound corresponded accurately at every point, and the opening and shutting of the eyelids did not disturb the parts. Considerable inflammation took place on the second day. The eyelids were much swollen, and the conjunctiva was also inflamed. The inflammation was reduced by bleeding and appropriate treatment. On the fifth day, suppuration had taken place where the ligatures had been introduced, and they were removed. From this time the pain and swelling disappeared; the wound was perfectly united throughout its whole extent; the deformity was entirely removed. The external angle of the eye was now in its natural situation, and the division between the eyelids corresponded on both sides. The patient could move the eyelids freely, and the cicatrix was not perceptible.

"In this operation the excretory ducts of the Meibomian glands, or at least their openings, must have been removed, and inclosed within the cicatrix when the parts healed.

"It is suggested that the inflammation which occurred might put a stop to the secretion from those glands. Walther concludes that, at all events, this case proves that the commonly received doctrine respecting Hordeolum and Chalazion is incorrect. If these diseases arise from a stoppage of the mouths of the excretory ducts of the Meibomian glands, in this patient there would have been a row of such swellings along the margins of the divided lids. The non-appearance of the cilia is attributed to the removal of the openings in the skin through which they shoot forth; the bulbs of the hairs being behind the minute apertures within the cicatrix. It appears therefore that, for the growth of the hair as well as plants, the access of the air is necessary. Perhaps, says Professor Walther, from these facts some new plan of cure may be suggested for Dystichiasis and Trichiasis. It would be required to make use of some application which would stop up the mouths of the canals through which the cilia grow so effectually as to exclude the air, by which the subsequent growth of the eyelashes would be prevented, which not unfrequently happens when they have been plucked out for the cure of those troublesome and frequently unmanageable affections.

"Professor Walther has lately performed the above operation twice." —*Lond. Med. and Phys. Journ. Dec.* 1826.

SURGERY.

34. **Brodie** *on Encysted Hydrocele. Lond. Med. and Phys. Journ. Dec* 1826.—In some cases, in consequence of previous inflammation, the opposite surfaces of the tunica vaginalis, adhere throughout a portion of their extent, while a serous fluid is collected in that part which is not adherent, forming a partial hydrocele. Hydrocele also occurs with a contraction in the centre, at which part there is usually a channel of communication, through which the fluid may be made to pass from one portion of the tumour to the other; occasionally, however, the contraction is so complete as to entirely separate the two portions of the tumour. Such

tumours are liable to be confounded with encysted hydrocele, though essentially different; the latter being altogether independent of the tunica vaginalis, and bearing a much closer resemblance to a common encysted tumour than to a proper hydrocele. The appearances on dissection, of the three cases of encysted hydrocele, are given by Mr. Brodie. In the first, the cyst "lay in the cellular texture of the spermatic chord, between the spermatic artery and vein, and the vas deferens." In the second, the cyst was attached to the epididymis; "the tumour was covered by the tunica vaginalis lying between it and the epididymis, and connected to them only by a very fine cellular texture." In the third, the cyst was attached to the anterior part of the testicle, below the epididymis. "The inner layer of the tunica vaginalis was reflected over one side of the cyst, while the cyst on the other side rested on the fibrous membrane of the tunica albuginea, by which it was in consequence separated from the glandular structure of the testicle.

"The encysted hydrocele of the spermatic chord, being very loosely connected to the surrounding parts, forms a very moveable tumour, which may be made to ascend into the groin, or to descend into the scrotum, accordingly as pressure is applied to it from above or below. When of a small size, it may be made to enter the abdominal ring, and hence is liable to be mistaken by a superficial observer for an inguinal hernia. It is, for the most part, unattended by pain, and not productive of actual inconvenience to the patient, except such as arises from its bulk. On the other hand, the encysted hydrocele of the testicle or epididymis, being bound down by the internal layer of the tunica vaginalis, is necessarily fixed in its situation, giving the testicle the appearance of being double or lobulated. In some cases the patient is very little molested by it; but in other cases I have observed that he experiences a good deal of pain, in addition to the inconvenience which is caused by the bulk of the tumour. In young persons, the encysted hydrocele, even when of a considerable size, admits of being cured by the application of stimulating lotions to the skin. In the adult, however, I have never known this method of treatment to succeed; but a cure may be effected by passing a seton through the cyst, or by making an opening into it, and dressing its cavity with lint."

Several cases are detailed, illustrative of these observations.

The encysted hydrocele is not a disease from which any ill consequences are to be apprehended; Mr. B. is of opinion, that, therefore, "there is no reason for the patient being subjected to the inconvenience of an operation for its relief, until it begins in some way or other to be a source of actual inconvenience; and, on the other hand, whenever this period arrives, there is no reason why an operation should not at once be resorted to." In one case, however, which came under the observation of Mr. B. the exposure of the cavity of an encysted hydrocele of the testicle, was followed by a severe inflammation of the testicle itself, owing Mr. B. thinks, not so much to the operation, as to the peculiar condition of the general system at the time of its being performed.

35. Earle *on diffused Cellular Inflammation. Lond. Med. and Phys. Journ. Jan.* 1827.—Mr. Earle, under the title of diffused cellular inflammation, considers those cases which have been classed under the general names of phlegmonous and traumatic erysipelas. He objects to the term phlegmonous erysipelas, because it is likely to be confused with common acute erysipelas, and because erysipelas is essentially an affection of the skin. The disease under consideration exerts its influence

principally on the subcutaneous tissue and fascia. It is true that this is accompanied with an erysipelatous redness of the skin; but this is rather to be considered as an effect of the changes which are taking place in the subcutaneous cellular tissue, than as the original primary affection.

"The seat of this disease," says Mr. E. "is in the subcutaneous cellular tissue: it consists in a rapidly diffused acute inflammation in this tissue, to which no bounds are set, and which, if not arrested quickly, terminates in most extensive suppuration and sloughing of the cellular substance and fascia, which relieves itself, if the patient survives, by large and uncontrollable sloughing of the integuments. I have known, in the short space of thirty-six hours, the whole integument of an upper or a lower extremity involved in one extensive sloughing abscess."

"This affection most frequently takes place in the extremities: in Mr. C. Hutchison's cases, it almost constantly occurred in the lower extremities, and was often produced by the irritation caused by the friction of coarse trowsers, wetted with sea water, on old indolent ulcers. I have more frequently met with it in the upper extremity. It has generally followed punctured wounds or severe bruises upon the elbow, and lacerations of the integuments of the hands or fingers. In several instances I have known it occur after punctured wounds of joints, or in the neighbourhood of joints, which have been attempted to be closed. In the majority of cases, it is accompanied in the early stages with well-defined inflammation of the absorbents; but these soon become so involved in the general tumefaction of the limb, that they cannot be traced. This swelling takes place with great rapidity and to great extent, accompanied with a dusky red appearance of the surface. In the earlier stages, there is a peculiar elastic feel in the integuments, which afford much greater resistance than in common œdema. If the integuments be divided at this period of the affection, the fat and cellular substance cuts with great crispness, and the wound gapes much. After a time, the sensation imparted to the touch is somewhat analogous to the crepitation of emphysema: it has a peculiar boggy feel; and now we find, on cutting down, that the work of destruction has taken place.

"The constitution participates much with the local affection. The secretions are either all suspended or deranged. The circulation is much hurried; the pulse hard, contracted, and frequent, and after a time irregular. The nervous system is greatly disturbed; the countenance becomes most anxious, and features contracted. There is great and constant vigilance; or, if the patient drops asleep, he awakes in alarm, or in a state of delirium. When the cellular membrane has extensively sloughed, the greatest prostration of strength accompanies it, and a state resembling the worst form of irritative sympathetic fever often closes the scene.

"The treatment best suited to this formidable affection, (which, if adopted in time, seldom fails to arrest its progress,) is the one which has been recommended by Mr. Copland Hutchison, in a paper published in the Medico-Chirurgical Transactions; to the real merits of which I can bear most ample and satisfactory testimony. This treatment consists in making very free longitudinal incisions, if possible before suppuration has taken place, through the swollen inflamed integuments down to the fascia or muscles. The vessels of the skin should be allowed to bleed freely, and even encouraged by warm fomentations; the limb should then be enveloped in a warm bread-and-water poultice. A large dose of calomel, antimony, and opium, should be administered; and after some hours the patient should be freely purged with senna and salts, or some other active aperient. If the incisions be made sufficiently large and deep, the relief is very speedy, and it is seldom requisite to repeat them. In a few hours I have witnessed the subsidence of tension and pain, the nervous system tranquillized, and the secretions restored."

The incisions should be made from three to six inches in length, in the long axis of the limb, which will best remove the distressing tension. Mr. E. says that these free incisions may be made with perfect impunity; he has never in any one instance, known the cut edges to ulcerate, or slough, except where the subjacent cellular membrane had extensively perished, and the integuments were in a state approaching to gangrene at the time of making the incision.

Mr. E. has given several highly interesting cases, illustrating the efficacy of the above mode of treatment. The first was a case of diffused cellular inflammation of the hand and arm from the bite of a dog; the second accompanied an ulcer in the leg; the third followed venesection; the fourth an accidental wound; the fifth a wound received in dissection; the sixth a fracture of the tibia. The seventh case was furnished by Mr. Warry; in this an incision was made which extended from an inch below the great trochanter to within an inch and a half of the ankle.

We have given at length the details of the fifth case, because wounds received in dissection have been productive of such severe sufferings, and have caused the premature deaths of some of the brightest ornaments of our profession. This case, we believe, is the first one in which the treatment adopted by Mr. Earle, has been tried, and is particularly valuable as it terminated favourably.

Nevertheless, we cannot avoid expressing our surprise, that wounds received in dissection, should be *allowed* to produce any unpleasant symptoms. We have heretofore published* our experience on this subject, in which the fact was stated, that when wounds received in dissection, were washed and *sucked* carefully and covered with court-plaster, no inconvenience *ever resulted.* Previous to the adoption of this treatment, scarce a day or a week passed, without some alarming injury being suffered by preceptors and students from this cause. Since this plan has been adopted, although very numerous and frequently repeated wounds have been received in the dissecting room, not the slightest ill consequence has ensued, except in one case, where the individual obstinately refused to resort to the preventive treatment.

"Mr. C. E. B—, ætatis twenty-two, of sanguine temperament and a free liver, on the 21st of April, in opening the cranium of a man who died of gangrenous erysipelas after injury to the head, pricked the middle finger of his right hand with a small spicula of bone: the wound was so small that it did not bleed. On going to bed, after entertaining some friends at dinner, and taking his share of the wine, his hand became afflicted with pain, which rapidly increased, with an intense burning sensation in the finger. He applied cold water, but, finding no relief, he had recourse to a bread-and-water poultice; notwithstanding which, he could obtain no sleep. On the following morning, eight leeches were applied, and a deep incision was made near the seat of the injury, but without any benefit: the inflammation continued to spread over the hand.

"I saw him about the middle of the day, at which time the first phalanx of the finger had perished. Distinct lines of inflamed absorbents could be traced up the arm, especially at its outer surface, but no tenderness or pain was felt any where except in the finger and hand, and there it was of the most intense and burning nature. Leeches were again applied, and the poultice repeated; his bowels were freely moved with calomel and tartar emetic, and senna and salts mixture. The pain in the hand continued unabated, and could only be tolerated by applying the coldest water.

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* See *Godman's* paper, in No 1, New Series, of this Journal.

"On the morning of the 23d, after a sleepless night, the hand and arm had a puffy œdematous appearance, although the redness of the absorbents was diminished. The tongue was furred, and pulse hard and frequent; skin hot and parched, and countenance much distressed. Sixteen ounces of blood were taken from the arm, and cold constantly applied to the hand. Opii gr. ij. Pulv. Antim. gr. iv. were given at night.

"24th.—He had passed a restless night, with constant state of vigilance. The arm was more swelled, and extremely painful; pulse 120, but softer. Opium was given in three-grain doses during the paroxysms of pain.

"25th.—The night had again passed without sleep, and at intervals there was delirium. The arm was more puffy, but the pain was rather diminished. Oleum Ricini was given to obviate costiveness, and the opium continued. The following night passed tranquilly, but without sleep.

"On the 26th, the arm was again very painful, and much swollen. It was enveloped in a bread poultice, made with a strong watery solution of opium. His bowels were open; his pulse frequent, but not strong; tongue covered with much brown fur; and he was more disposed to delirium, with a most anxious sunken countenance. Thirty drops of Guttæ Nigræ were given at night, in addition to the former pills of opium.

"On the 27th, there was no very sensible change. Still no sleep at night.

"On the 28th, he was visibly much worse. The inflammation had extended to the deltoid muscle on the outer side, but did not appear to have reached the axilla on the inner side; nor was there any pain at this part, or disposition to extend over the pectoral muscle. From the insertion of the deltoid downwards, the whole arm was as tense as possible, and felt remarkably firm when pressed. The colour was a dusky red, rather more vivid at the upper margin. He had been delirious all night, and appeared rather comatose. His countenance was shrunken, wild, and ghastly. He was so weak that he could not sit up in bed; his pulse was irregular, feeble, and fluttering; his tongue covered with thick brown fur. It was evident that he could not long survive under these circumstances, and, although I had no evidence in favour of the practice in a similar case, I resolved to make large and deep incisions, provided it met with Mr. Lawrence's concurrence, who was so obliging as to visit him with me. Mr. L. entertained the same view of the case, and in his presence I made three deep incisions,—one commencing a little above the insertion of the deltoid, and more to the outer side, which extended down to the olecranon; a second, about six inches long, from just below the olecranon to the wrist; and a third, about three inches in extent, on the inner side of the forearm. No suppuration or sloughing was apparent, but the wounds gaped much, and the fat was very firm and granular. The wound at the outer side of the forearm bled very freely, to the extent of from thirty to forty ounces; after which the limb was enveloped in a large bread-and-water poultice. In the evening, when I saw him, his countenance was much improved; and his pulse was steady, soft, and full, about eighty beats in the minute. The pain had nearly subsided, except in his finger. He was ordered a dose of calomel and jalap, and to continue the opium after its operation.

"29th.—He had passed the night tranquilly, but without sleep. His countenance was much improved, and comparatively cheerful; pulse stronger, and quite soft; arm quite easy; skin flaccid and pale.

"30th.—He was nearly the same as yesterday; still no tranquil sleep could be obtained. In the evening there was great restlessness, with slight wandering. Two grains of opium and six of camphor were given to him at night, which, for the first time since the receipt of the injury, procured repose. He slept tranquilly for four hours, and awoke perfectly collected, and with the arm quite easy. When I paid my visit, I found him greatly improved in every respect. Suppuration had taken place at the wounds. His bowels were moved with Infus. Sennæ and Tinct. Jalapæ; and, after the operation of the medicine, he took solid food with much relish. The opium and camphor were repeated at night.

"From this time he continued to go on most favourably: very copious healthy suppuration came readily away from beneath the whole integuments of the upper and forearm; but no sloughing took place of the cellular membrane or fascia. By lighter dressing and bandaging, the whole rapidly filled up and skinned over. In a few days he was ordered the Sulphate of Quina in Infus. Rosæ, and was allowed to take a mutton chop and some claret.

"Nothing particular occurred during the subsequent treatment, except the formation of abscesses at the back and front part of the hand, which required to be freely opened: during the formation of these, the constitution again suffered some excitement. The extremity of the wounded finger was also very painful, until the lateral ligaments were divided, and the dead portion removed. The finger remained swollen for a considerable time, and was the last part to heal. He subsequently went out of town when he rapidly regained his health and strength."

36. *Rupture of the Urethra, without External Wound.*—In the Lond. Med. and Phys. Journ. for January last, two cases are recorded of this nature, both produced by falling with the legs crossing, the one a railing, the other the edge of a boat, the force of the fall being thus sustained by the perineum. The most prominent symptoms were retention of urine with severe scalding pain in the perineum, and earnest desire, but incapacity* to empty the bladder. The perineum was entire, but swollen and very tender; the cuticle of this part, as well as that of the inside of the thighs was abraded, where ecchymosis to a considerable extent existed, producing great discolouration, in which the scrotum and penis participated. All attempts to introduce a catheter were fruitless, the instrument passing no further than the bulb of the urethra, on reaching which place, it appeared to enter a cavity, or to be out of the canal, its point being wholly unsupported, and falling from side to side. The attempt to introduce the instrument produced a flow of blood from the urethra.

The nature of the accident being ascertained the treatment is obvious. The patient should be placed on a table, in the same position as in the operation for lithotomy, an incision made along the line of the raphe of the perineum, and the coagulated blood removed. A catheter introduced at the glans penis may then be passed into the bladder, and the urine evacuated. The catheter should be left in the bladder, and fixed in its situation by a T bandage, and simple dressings applied to the wound. The two cures alluded to were treated in this manner, and with success.

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* This is a curious symptom; the inability does not arise from the escape of the urine at the breach, since the bladder becomes painfully and visibly distended, and all the symptoms proper to retention are manifested. Nor is it produced by the tube being plugged by coagula, for after laying open the perineum, and exposing the breach in the canal, the patient is incapable, by any effort, of voiding the urine.

37. *Acupuncturation in Tic Douloureux.*—Dr. Bergamaschi has published two cases of this most painful disease, cured by acupuncturation, after most other known remedies had been tried and failed.

38. *Aneurism.*—In our last number we made our readers acquainted with a highly interesting case of carotid aneurism, in which Mr. Wardrop tied the artery beyond the tumour. Mr. W. has recently had a second opportunity of testing the propriety of the operation. We extract from the Quarterly Medical Review the following short history of the case.

"Elizabeth Bellamy, aged about sixty, was admitted into the hospital in Panton-square, 1st December, 1826. On the right side, and lower part of the neck there was a hemispherical and strongly pulsating tumour, about two inches in diameter. Its lower margin was in close contact with the internal portion of the clavicle, and it extended two inches upwards in the track of the sterno-mastoid muscle, which was heaved from its natural situation, and had suffered considerable absorption. She first observed the tumour about six months ago. During the last four years had been subject to giddiness and head-ache, and had twice been attacked with apoplexy. On admission, her health was much disordered; she complained of head-ache, throbbing, noise in the ear, thirst, want of appetite, and sleeplessness; legs anasarcous. By bleeding, digitalis, opium, and aperient medicines, these complaints were ameliorated, and, on the 10th, Mr. Wardrop, with the assistance of Mr. Lawrence, cut down on the common carotid, and applied a ligature to it about an inch above the tumour. The ligature employed was the vegetable substance, resembling catgut, used in fishing-tackle; and the ends were cut close. No immediate effect was perceptible on the tumour, but it has since been gradually and progressively diminishing in size, with a corresponding diminution in the force of its pulsations. At this date, (fifteen days subsequent to the operation,) it has lost more than one-half of its original dimensions; the pulsation is daily becoming fainter: the sterno-mastoid has subsided to its natural level; the integuments of the neck are puckered; the patient is in good spirits, and wholly free from her former complaints.

"The incision united by the first intention.

"Immediately after the operation a remarkable difference was perceptible between the pulsations of the two wrists, that in the right arm being much fuller than the other, evidently owing to the artery being distended by an increased stream of blood."

39. *Staphylo-raphe.* Mr. Herbert Mayo has published in the February number of the London Medical and Physical Journal, an account of this operation, performed on a man aged twenty-six, whose soft palate had been imperfect from birth, and his uvula divided by a fissure into two equal portions.

"This patient could neither swallow nor articulate like other persons. Each time that he attempted to swallow a draught of liquid, some of it escaped through the nostrils; and part even of the solid food which he ate made its way through the fissure, so as to rest upon the upper surface of the palate, till he managed to dislodge it. His speech was unpleasant and gutteral, not unlike that of a person with an hare-lip. He could, however, articulate every letter intelligibly, except the letter T."

Mr. M. performed the operation in the following manner.

"The edge of either flap of the soft palate was removed with a thin double-edged scalpel, the part to be removed being fixed by means of Assalini's tenaculum; little more than the membrane covering the edge of each flap was taken away. Four sutures were employed. The ligatures were introduced by means of a small curved needle, fixed in a strong porte-aiguille. The ligatures passed through the middle of the cut surface, and pierced the membrane at the distance of four or five lines from the cut edges. The three upper ligatures were drawn tight, and tied in succession. The lowest, when drawn tight, produced coughing and a sense of suffocation: it was loosened to relieve these symptoms, and afterwards tied in such a manner as merely to hold the cut surfaces at that part in apposition."

In the evening the patient swallowed the small quantity of food allowed him, without the return of any part by the nostrils. On the second day the two uppermost, and on the third, the remaining ligatures were removed, every part of the line of union appearing to hold, but subsequently one-third of the posterior portion gave way, the remainder united firmly. The operation was repeated on the separated portion, and with success.

Mr. M. recommends that the ligatures should be removed by the third day; and that during the ensuing two, three, or four days, the patient should submit to the most rigorous abstinence, taking no more than a few table-spoonsful of broth or a melted jelly twice in twenty-four hours. He also advices that the ligatures should be drawn tight, for "if they are merely drawn till the cut surfaces are brought into contact, the ulceration which immediately follows is liable so to loosen them that the first adhesion may be partially dissolved or materially weakened."

40. *Removal of a portion of the humerus, in order to form an artificial joint. Gerson and Julius's Magazine, July and August,* 1825.—We copy from the Edinburgh Medical and Surgical Journal, a notice of the above operation, which was performed in the hospital at Hamburgh. We regret much, that more minute and lucid details of this interesting case have not been furnished.

"A young man dislocated his humerus, and fractured it close to its head. He did not apply for several days after the accident. At the end of some weeks the fracture was not reunited; and the lower, (proximal or distal?) end of the bone stood so much out that its sharp edges constantly irritated the soft parts, and the patient could not move his arm, as the slightest motion caused intolerable pain. To remedy this, the point of the lower, (proximal or distal?) fragment was separated from all the surrounding soft parts, and a considerable portion sawed off, in order to form an artificial joint. The operation succeeded perfectly. After the healing of the wound, the use of the arm was restored, with little difference from the sound arm.

41. *Artificial joint.*—In Omodei's Annali Universali di Medicina, No. III. Arezzo, 1826, Dr. Cittadini has related the case of a labourer, who, in consequence of returning to his work before a fracture of the bones of the forearm had firmly united, had an artificial joint formed. Rest, and the rubbing with violence the fractured surfaces against each other, failing to produce solid union, it was determined to cut off the extremities of the fractured bones.

"This operation was performed on the ulna, by dissecting the soft parts from the fractured extremities, and cutting about three lines from each of them. It was intended to have performed a similar operation on the radius, but that on the ulna had been so painful and tedious that the patient refused to submit. Severe inflammation of the arm and hand followed this proceeding, terminating, notwithstanding suitable depleting treatment, in extensive suppuration. By proper openings, and counter-openings, the abscesses were cured; at the end of a month the fracture was found to be consolidated; and the patient in time regained the use of his arm."

The learned editor of the London Quarterly Medical Review after detailing this case, makes the following pertinent remarks:—

"The preceding case has been quoted by some of the Medical Journals in this country, and passed over without remark. We mention it only because we think it should not be allowed to go forth to the world without a protest against the practice it exemplifies. That an operation so painful, tedious, and dangerous, as cutting into the centre of a limb and dissecting, or rather scraping, (for it can be nothing else,) the soft parts from around the two ends of a bone, should be employed to effect an object which can be invariably attained by a measure so simple and expeditious as passing a seton between the disunited surfaces, betrays either gross ignorance of the present state of surgery, or a still more lamentable deficiency of judgment.

42. *Excision of the head of the humerus. Ed. Journ. July*, 1826.—"This severe operation has been lately performed by Mr. Syme, of Edinburgh, in the case of a woman, who had a diseased shoulder-joint of several years' standing. The operator made a perpendicular incision from the acromion, through the middle of the deltoid, extending nearly to its insertion, and traversing an old sinus. On introducing his finger, he felt that the disease was almost entirely confined to the head of the humerus; he, therefore, formed, by a semilunar cut, a flap from the scapular portion of the deltoid —exposed the joint—insulated the head of the bone—protruded it—and sawed it off, without any injury to the soft parts. The glenoid cavity of the scapula was found quite sound, except that it was deprived of its cartilage. A portion of the acromion was bare and rough; it was, therefore, removed by the cutting plyers. There was a smart hæmorrhage at first; but the only artery of consequence which was divided was the posterior circumflex. This was compressed with the finger till the operation was finished, and then tied. The flap was now replaced, and retained in perfect apposition by five or six stitches of the interrupted suture. Simple dressings were applied—the whole operation occupying ten minutes. Some fever followed, and was met by proper antiphlogistic measures. Erysipelas and some degree of sinking required stimulants, and the cure went regularly on to a favourable termination. The limb is shortened about an inch, and the shoulder-joint is susceptible of distinct motion in all directions by means of its own muscles, while all the other joints of the limb are as serviceable as they ever were.

"This bold operation is creditable to Mr. Syme, who has thus remedied a disease of the shoulder-joint that had existed for seven years, rendering the arm entirely useless—embittering the patient's life—and threatening to destroy it altogether. This operation, originally performed by Mr. White, of Manchester, and by one or two other surgeons, has, for a great many years, fallen into disuse. Perhaps Mr. Syme's case may excite the attention of surgeons to it once more."—*Med. Chir. Rev. Jan.* 1827.

Mr. Syme has since performed the same operation in a similar case with the most gratifying result.

43. Robertson's *Operation for the extraction of a polypus from the nose.—Ed. Med. and Surg. Journ. Jan.* 1827.—A. W. a man aged sixty-four, applied at the Kelso Dispensary with a polypus in the right nostril, of

such size as to occupy the whole nostril, and it formed an external tumour of considerable magnitude, the pressure of which had caused a considerable absorption of the neighbouring bones, the extremity of the polypus projected a little beyond the orifice of the nostril. The polypus could not be removed by the ordinary methods, as it was found impossible to introduce the forceps or ligature, and Mr. Robertson determined to extirpate it in the following manner:—

"An incision was made, beginning near the point where the lacrymal duct terminates in the nostril, and continued down to the under edge of the cartilage. By this incision, the body of the polypus was brought into view. Two ligatures were passed through it in a transverse direction, as high up as it was possible to reach. But the tumour, from its great bulk, occupied so completely the whole cavity of the nostril, that it was found impossible, even with the smallest bistoury, to reach its root, which extended far back into the nostril, and down to the throat.

"By continued perseverance, however, so much of the tumour was brought away by the knife, aided by the ligatures, that I was enabled to pass the point of my finger down to the root, and at last succeeded in bringing away the whole of it. We found the weight of it amounted to 3 oz. 6 dr.

"The edges of the wound were brought together and retained in union by three stitches at proper distances, slips of adhesive plaster being applied in the intervals, and over these the usual dressing was placed. At the end of a fortnight the wound had completely healed up, and very little deformity was left. The loss of blood during the operation was not so great as might have been looked for from the size of the tumour, and the extent of its connections."

44. *Intestinal suture.*—In the Nouvelle Bibliothèque Médicale, for November, 1826, a case is related of strangulated inguinal hernia, during the operation for which, a fold of intestine escaped from the hands of an assistant, and slipping over the cutting edge of the instrument, was divided transversely to nearly the extent of an inch, and fæces and gas escaped through the opening.

M. J. Cloquet employed the suture recommended by M. Jobert, and with complete success.

"A needle, armed with waxed thread, was introduced into the side of the intestine, at two lines distant from its division, and drawn through again at about a line from the division; then passing the needle to the opposite edge of the wound, he introduced it at one line, and drew it out again at two lines distant from the wound; after which, laying hold of the threads, he drew them together, thus approximated the serous tunic on each side the wound, and afterwards fixed them in the position by simple knots. Three sutures were inserted at equal distances precisely in the same way; the threads were cut close off, and the whole returned into the abdomen. Four hours after the operation, he had an alvine evacuation, the pulse was relieved, and the countenance improved; in the night, pain in the left iliac region, with tenderness of the abdomen supervened; but was overcome by moderate antiphlogistic treatment. Twenty-five leeches were applied with demulcent drinks, and the pain disappeared. The next day there was still slight uneasiness in the abdomen, and leeches were again applied. The bowels were evacuated naturally.

"Some days after, the alvine evacuations were suppressed, without causing any constitutional disturbance in the patient. Mr. Richerand ordered some castor oil, which operated freely.

"From this time the wound healed rapidly, without a single unpleasant symptom."

45. *Excision of portions of the ribs.*—The credit of being the first to perform this operation appears due, not to Mr. Richerand as has been supposed, but to Mr. Cittadini, lecturer on anatomy and surgery, at the Royal Hospital of Arezzo, he having read an account* of a case in which he performed the operation, to the Academia del Petrarca d'Arezzo in January, 1813, while Mr. Richerand's case occurred in 1818. Very recently Mr. C. has published in the Annal Universali de Medicina, four other cases. In all these the operation was successful. Mr. C. concludes his account by observing "that *resection of the ribs* is not one of the very dangerous operations, as surgeons have hitherto believed; and that hæmorrhage of the intercostal arteries may be checked simply by compression, without having recourse to the ligature, provided they are cut near the sternum, where they are small in diameter. There is scarcely a single surgeon who has not witnessed the fatal consequences of caries of the ribs. After profuse suppuration, enduring for months or years, emaciation, marasmus, and death ensue. It is useful to know, therefore, that the diseased parts, which constitute the origin of the fistulous sinuses, may be removed by the knife without material risk."

46. *Congenital Luxation of the Femur. Med. Rev. Jan.* 1827.—Surgeons are acquainted with two varieties of luxation of the femur, the accidental and spontaneous. Mr. Dupuytren, in the Repertoire Generale, has described a third, the congenital. This "consists in a transposition of the head of the bone, from the condyloid cavity to the dorsum ilii, or external iliac fossa, a transposition which is observed from birth, and which seems less the effect of any accident or malady, than the result of a want of depth in the acetabulum.

"This displacement is distinguished by a shortening of the affected limb, and an ascension of the head of the femur into the external iliac fossa. It has also for its characteristic marks a projection of the great trochanter, a contraction of the muscles of the upper part of the thigh, towards the crest of the ilium, where they form around the head of the femur, into a species of cone, the base of which rests on the os ileum, and the summit is at the great trochanter. The tuberosity of the ischium almost denuded, through the displacement of the muscles; the inversion of the thigh, and, of course, the direction of the heel and of the ham outwards, and of the knee and point of the foot inwards; an obliquity which is greater in proportion to the age of the individual and the dimensions of the pelvis, from which there results a tendency in the thighs to cross each other; a sharp retiring angle at the superior and internal part of the thigh, at the point where it is united to the pelvis; the emaciation of the whole of the limb, but more especially of its upper part; all these are symptoms of this species of luxation.

"Although this luxation is important of itself, yet it is more so on account of its diagnosis; for it presents all the signs of that which is the consequence of a disease of the hip-joint—with which it has frequently been confounded, so that individuals have been made to undergo the treatment required for such diseased affection of the joint, who had only this original defect in their conformation.

"From such an error in diagnosis, Mr. Dupuytren, has seen persons constrained to keep their beds for several years, who were affected with this congenital luxation. He has witnessed others, who had to bear the application of leeches without number, of blisters, of cauteries, and especially of moxas. He has seen amongst other victims of this mistake, a young girl who had been forced, by a preposterous madness, to endure the application of twenty-one moxas around the hip—and, as we may well imagine, without the slightest change produced by these useless and barbarous applications. "I have also seen, (says the Baron,) a nurse whom the disconsolate parents accused of having, by carelessness or brutality, produced an accidental luxation in an infant committed to her care, who came into the world with this defect of conformation.

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* This was published in 1820, in the Journal Complementaire.

"With regard to alleviating the inconveniences arising from this affection, the experience of Mr. Dupuytren has only furnished him with two means of obtaining this end. The first consists in the daily use, excepting when counter-indicated by perspiration, or the catamenial discharge, of baths by repeated immersions of the whole of the body, including also the head, which is to be defended in the usual manner. The immersions are to be made in common or in saline water, only it must be perfectly cold, and the patient must continue in the bath during several minutes—not more.

"The second remedy consists of the use, at least during the day, of a girdle which embraces the pelvis, and which is adapted to the large trochanters, keeps them at a regular height, and forms a solid junction of these loose and ill-assorted parts, preventing the continual vacillation of the body on articulations destitute of cavities.

"This girdle ought to be made according to certain rules, so as to fulfil the purposes required. It ought to rest on the contracted part of the pelvis, between the crests of the ilea and the trochanters. This girdle ought to be well stuffed with hair or cotton, and to be covered with doeskin. The heads of the trochanters ought to be partly lodged in depressions in the girdle, which must be fixed to the pelvis by straps and buckles, passing around the bodies in various directions.

"Although Mr. Dupuytren has never succeeded in completely removing the symptoms by these means, yet he has materially alleviated the inconveniences occasioned by the malady."

Mr. D. has seen twenty-one cases of this disease in eighteen years.

47. *Amputation of the Neck of the Uterus.*—Mr. Lisfranc, some time ago performed this operation, on account of a cancerous affection; the patient has been presented by him, to the Section of Surgery, for examination. The neck of the uterus was found to have nearly re-assumed its natural conformation, but to be somewhat shorter than natural. There are no symptoms of a return of the disorder.—*Rév. Medicale.*

48. *Rupture of the Aorta.*—"Mr. Larrey presented a preparation to the Section of Surgery of the Académie Royale, in July, taken from the body of a man who died in consequence of a fall. In this preparation the aorta is seen ruptured near the origin of the arteria innominata: seven or eight pounds of blood were found poured into the right side of the chest. (*The French pound consists of sixteen ounces.*) The subject of this accident survived the injury fifty-two hours."—*Biblioth. Méd.*

49. *Injury of the Rectum.*—"A nurse, in applying a glyster, introduced the point of the syringe so roughly and unskilfully as to push it through the back part of the rectum. By the exertion of considerable

force, she emptied the contents of the syringe into the pelvis. The patient, a young lady, suffered considerable pain afterwards. On the sixth day a membranous mass passed away with the fæces, which was ascertained to be a portion of the rectum. Upon examination, an opening was found in the back part of the gut, about the size of a dollar, and about two inches from the anus. If a sufficient quantity of water was injected, the rectum was distended, and also the interval between the posterior surface of the gut and the sacrum, in consequence of the fluid escaping through the aperture, the edge of which could be felt loosely floating. The greatest distress and danger arose from the escape of the fæces into the pelvis. Injections were used for the purpose of washing out any portion which passed through the opening: a part of the fæces still passed in the natural manner. Mild injections were frequently used, in a small quantity, that the rectum might not be kept separated from the sacrum. Light broths, yolk of eggs, &c. were allowed as diet. Professor Gräfe was consulted under these circumstances, and he adopted the following plan. He introduced a portion of the intestine of an animal into the rectum, and, having filled it with water, he tied the end projecting from the anus: by this means the rectum was kept in contact with the sacrum. Air was afterwards substituted for water, as the weight of the latter was found inconvenient. This plug was removed every twenty-four hours, and the fæces, which its presence prevented from descending, evacuated; and the intestine well oiled, again introduced, and filled with air. A gradual improvement followed, and in a few weeks the wound was entirely closed, without any contraction of the rectum, and the fæces were passed without difficulty."—*Lond. Med. and Phys. Journ. from Journal fur Chirurgie von Gräfe und Walther, band* ix.

50. *Fracture of the Neck of the Thigh Bone. Mémoires de la Société Médicale d'Emulation de Paris, tome* ix. p. 95. *Paris,* 1826.—"Sabatier, it is well known treated this kind of fracture by position of the limb, without any bandagings whatever; his method subsequently modified, perhaps improved, by Mursinna, is now preferred by Dupuytren, in whose practice it is found agreeable to the patient, and less subject than others to accidents. A man who had been several years cured, by this method, of fracture of the neck of his thigh bone, walked frequently from Mendon to Paris, for the purpose of consulting Sabatier on another disease: this man had some, but very little, lameness or deformity: he died in the Hôtel Dieu from cancer on the face. Dr. Ribes, on dissecting the fractured thigh, found the cellular texture around the joint much condensed, and the tendons of all its muscles thicker than those of the other side: the capsule was greatly thickened, and nearly cartilaginous in consistence. On the articulation being laid open by a circular incision, the neck was discovered to have been broken near the head of the bone: the portion of the neck thus separated from the head was rounded upon the fractured joint, and covered with true 'diarthrodial' cartilage: and this rounded portion itself was hollowed into a deep cavity in the middle of the part corresponding to the head of the thigh-bone, and covered with 'accidental diarthrodial' cartilage. The head of this bone was so singularly deformed, that it presented the appearance of a skull-cap placed between the cotyloid cavity and the new head formed in the fractured neck: superiorly, a strip of periosteum enveloped the neck of the thigh-bone, and, being attached to the edges, the caplike cavity united the upper and lower parts of the bone. The 'inter-articular' ligament was sound, but shorter and wider than is natural: it connected the cotyloid and cap-

like cavities, and had become so very thick as to form a 'double articulation accidentally developed.' "

51. *Hemorrhoids.*—Much difference of opinion exists among surgeons respecting the best method of removing these tumours. Many practitioners still adhere to the old mode of destroying them by the ligature, an operation often productive of severe symptoms both of constitutional disorder and intestinal irritation, and always excessively painful. The method of our esteemed and talented friend, the Professor of Anatomy in the University of Pennsylvania, (for an account of which see Vol. I. p. 17. of this Journal,) though a great improvement upon the common operation by the ligature, is nevertheless sometimes attended with great pain.

Mr. Kirby having witnessed in one case very distressing effects, and in another a fatal termination from the application of a ligature to hemorrhoidal tumours, determined to attempt their cure by excision. In a small work,* published twelve years ago, he detailed five cases successfully treated in this way. In a recent publication† he has given twenty-four cases of various duration and degrees of severity, permanently cured by cutting off the morbid growth and relaxed parts, and adduces many arguments in favour of the operation. Mr. K. operates in the following manner.

"Having ascertained by careful examination the extent of the disease and the number of parts involved in it, he disposes his patient on a table in the same manner as in the operation for lithotomy. He returns every part which has been recently protruded, and passes a large curved needle, armed with a strong ligature, through the entire circle of the pendulous projection. After these preliminary measures, requesting the patient to force gently downwards, he draws the parts firmly towards him, and removes the whole by one stroke of the scalpel. A gush of dark-coloured blood from divided veins always follows the incision, but ceases to flow almost immediately; and if any arteries discharge blood by jets, they are generally easily restrained by a compress of sponge, or two or three folds of charpée, covered by the T bandage. On some rare occasions it may be requisite to secure arteries in the usual mode by ligature."

Numerous examinations in the dissecting room, have satisfied Mr. K. of the fallacy of the old opinion, that these tumours consist in a varicose distention of the hemorrhoidal veins, and also convinced him that no direct or large communication exists between the veins concerned in the operation, and the tributary trunks of the vena portarum. "In every case of external hemorrhoids," he remarks, "the tumours appeared to be composed of a prolongation of the cellular substance, in a state of unusual firmness, surrounded by some veins, and covered by the integuments which form the folded margin of the anus. The veins were branches of the internal iliac. In every case of internal hemorrhoid the structure was pretty similar; the veins, however, seemed enlarged, and were branches of the hemorrhoidal."

As a general rule, Mr. K. says, that the incision or incisions should be confined to such parts as are situate below the sphincter muscle. These he removes freely by a scooping motion of the knife, carried on one side through the integuments at the base of the hemorrhoidal mass, and on the other, through, or a little above, the furrow which marks the union of the skin with the mucous membrane of the bowel. This depression lying within the margin of the anus, the patient must force down to bring it into view. After the operation, the entire wound is drawn within the bowel, and so forcible is the contraction of the sphincter, and the wounded surfaces are so closely applied to each other, that Mr. K. is of opinion that the chance of hæmorrhage is diminished to nothing. Excessive contraction of the anus must be prevented, by conducting the after-treatment so as to moderate and regulate the contraction which attends the adhesive and granulating process. This may be accomplished by the use, when we fear the contraction will be excessive, of the tent or bougie.

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* Observations on the Treatment of certain severe forms of Hemorrhoidal Excrescences, &c.

† Additional Observations, &c.

MIDWIFERY.

52. *Pregnancy complicated with Hydatids.*—" Dr. Thuillier, of Amiens, has published a case of this kind in a late number of the Journal General, of which we shall give a brief abstract in this place.

" *Case.*—Mad. Hec.—aged forty years, had been plunged in misery and distress, from her own bad conduct, for some years. She was subject to attacks of lipothymia and vomiting after eating. For four months the menses had been wanting, and it was supposed she was pregnant. Dr. T. examined, but could not decide on this point. The woman herself, who had born nine children, did not consider it as pregnancy. She believed, from the vomiting after food, that she laboured under scirrhus of the stomach, of which complaint her mother had died. Low diet and diluents were prescribed. There was now developed much irritation about the uterus, and leeches were applied to the groins and vagina. The irritation was removed. The stomach complaint was now much relieved. A month or more after this, our author was hastily summoned to Madame H. who was said to be in labour. The uterus was now much larger than when last examined, and seemed to fill the pelvis. There were bearing-down pains, and in these, the uterus felt very turgid. The os uteri, however, was close, and no discharge from thence. The pains persisted, without any alteration in the cervix or os uteri. This state continued three days more, when it was perceived that, at each bearing-down pain there was some discharge of clear water. This was followed some days afterwards, by a large number of hydatids, of various sizes, from an inch in diameter downwards. She continued to pass these bodies for fifteen days. In the mean time the size of the uterus rapidly increased, and rose out of the pelvis. It was now ascertained that there was a fœtus in utero, and yet the hydatids were discharged daily in considerable quantities. Three or four months after this, she was delivered of a child at the full term, the hydatids having never ceased one day to be discharged. There were one hundred and forty-eight of these bodies collected, and the number broken and unobserved could not be estimated. The patient recovered and did well. She has since become pregnant."—*Med. Chir. Rev. Jan.* 1827.

For a case somewhat similar, see Treatise on the Diseases of Females, by W. P. Dewees, M. D. &c. p. 297.

53. *Transfusion in uterine hæmorrhage.*—In the London Medical and Physical Journal for February, 1827, another successful case is recorded.

MEDICAL JURISPRUDENCE.

54. At a meeting of the Section of Medicine of the French Academy, in August, the following circumstances were stated:—Mr. **Barbier**, of Amiens, reported, that a woman of the age of twenty-four, whose mind had been strongly affected with the recital of a murder committed by a girl named Cornier on an infant, was inspired with the idea of doing the same thing, and soon afterwards was inclined, by an almost irresistible inclination to destroy her own child. She had, happily, strength enough to resist this horrible propensity, and several circumstances happened to prevent the accomplishment of the crime she meditated: but she is not yet free from this terrible *monomania;* and from time to time the desire to murder her child springs up again in her mind in spite of herself. Messrs. Marc, Bricheteau, and Esquirol, mentioned analogous instances, arising out of the recital of the same murder of the woman Cornier. Mr. Bricheteau related the case of a young lady, who, having been to Vincennes, and having often seen the spot where Papavoine assassinated the two children, was so affected by it, that she conceived the desire to destroy her own infant, and also her mother. Mr. Esquirol said, that he had been consulted about a month before by a gentleman, forty years of age, who, since the publication of the accounts of the crimes not long before committed, had conceived the wish, in spite of himself, to kill his wife. Similar cases were mentioned by Mr. Villermé, Mr. Bailly, and other members. Mr. Barbier expressed it as his opinion that corporeal disorder was an indispensable preliminary condition, in which Mr. Esquirol acquiesced, all those whom he had seen affected with monomania having been melancholics and subject to disorders of the stomach.—*Lond. Med. Rep. Dec.* 1826.

55. **Venables** *on the application of Liquid tests, for the detection of Arsenic and Corrosive sublimate, when administered as Poisons, &c. Lond. Med. and Phys. Journ. Dec.* 1826.—The soluble salts of silver and of copper, are regarded as the agents best suited to the detection of arsenic in solution. When the oxide of silver is combined with arsenic, a yellow precipitate is formed, but we cannot pronounce at once that arsenic is not present in a solution when no precipitate occurs on the simple addition of nitrate of silver, because the nitric acid exerts a stronger affinity for the oxide of silver than the arsenious acid. Hence, it has been recommended to add a small portion of alkali, or alkaline carbonate to the suspected solution, by which means, an alkaline arseniate is formed, and on adding the nitrate of silver, a double decomposition then takes place, and the characteristic precipitate is thrown down. Several objections have been urged against this test, and various plans for obviating them, have been proposed. Mr. Venables recommends that the operator should test the suspected solution, in the first instance for the two salts—muriate and phosphate of soda, which are most likely to embarrass his future proceeding; this may be effected by placing a drop or two of the suspected fluid on a card or white plate, and several of these may be so prepared. To one we may add nitrate of silver, which will discover the alkaline muriates, if they be present; and the sulphate or nitrate of iron, will discover the phosphate of soda. If these re-agents show the existence of either of the above salts in the solution, they should be removed by the cautious addition of their respective precipitants, and the subsequent filtration of the liquor. In this manner the suspected fluid may be freed from all these sources of embarrassment.

The oxide of copper forms with the arsenious acid an insoluble salt, of a beautiful green colour, Scheele's green. The sulphate, is the salt of copper, generally used as a test for arsenic. In this case, also, we are obliged to resort to double decomposition, for the other acids exert a stronger affinity towards copper than the arsenious.

Mr. Venables thinks that in all suspicious cases it would be well to concentrate the suspected fluid by distillation or evaporation; as the solution may be so dilute as to afford no sensible indication of the presence of arsenic, on the addition of the most delicate tests, though that substance be present.

Various means have been devised for the detection and identification of corrosive sublimate. The habitudes of mercury with iodine, afford ample and satisfactory means for this purpose. "If a fluid hold corrosive sublimate in solution, provided the solvent be not a spirituous one, immediately on the addition of a dilute solution of hydriodate of potass, a yellowish cloudy appearance occurs, which soon assumes a beautiful red colour. This is an extremely delicate test; but, that we may obviate every source of fallacy, we should take care to distil off all those menstruums, spirits, essential oils, &c. in which the precipitate is soluble, and which might hence obscure its indications. The red precipitate, which is thus formed, exhibits distinctive characters, as its solubility in alcohol, &c. and in an excess of the precipitating agent, hydriodate of potash. Exposed to a moderate heat, it passes to a yellowish white colour, and iodine in vapour is seen to rise; and, lastly, the whole evaporates. Triturated with zinc or iron filings, it is decomposed, and metallic globules of quicksilver may be readily distinguished, intermixed with the mass. The best mode of exhibiting this phenomenon is to introduce the mixture, moistened with water, into a glass tube or the bowl of a tobacco-pipe, and urge it gently with the blow-pipe. Let the contents, when dry, be thrown out upon paper, and the metallic globules may be seen very distinctly; even though the quantities subjected to experiment may have been very minute.*

"Corrosive sublimate is very readily decomposed; and therefore, although this poison may have been administered, the tests will afford no indication of its presence, in consequence of the partial reduction of the sublimate, and its conversion into calomel. Indeed, the means usually resorted to for relief, generally effect this reduction. Calomel, however, it should be recollected, is insoluble, while at the same time it is highly volatile, and easily sublimed by heat. In such cases, the solid contents of the stomach should be exposed to heat in a proper vessel, and the sublimed powder triturated with hydriodate of potass; when, if the powder be calomel, a greenish-yellow colour is produced, owing to the double decomposition which ensues. The resulting protiodide may be decomposed as above, and metallic mercury evolved."

It is evident that when the contents of the stomach are opaque or coloured, that these sources of embarrassment should be removed. When the opacity arises from the presence of substances mechanically suspended, they may be often separated by passing the fluid through a common filter; it is better, however, to line the filter with charcoal paste. It is believed by many, that animal charcoal destroys vegetable and animal colouring matter by some chemical agency, but Dr. V. has established by experiment, that its action is purely mechanical. The ivory-black, according to Mr. Phillips, sometimes contains a muriate, it should, therefore, be boiled in distilled water, and then washed with boiling distilled water till the washings cease to precipitate muriate of silver on the application of nitrate of silver. After these repeated washings, the ivory-black forms a dense solid cake of a pasty consistence. "A funnel should be lined with filtering paper, and the internal surface of the paper spread pretty thickly with the charcoal paste. The coloured fluid may then be cautiously poured into the filter and allowed to ooze through. If the filtered fluid should still be coloured, it may now be boiled with a little ivory-black in a Florence flask, and again passed through the filter, when in all probability, after two or three successive filtrations, the fluid will pass through colourless.

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* Hydriodate as a means of distinguishing corrosive sublimate from arsenic, is preferable to that recommended by Brugnatelli, which is not only complicated, but unsatisfactory.

If the colouring matter is chemically dissolved in the fluid, this process will not answer. When the colour is produced by vegetable or animal substances, as it almost always is, it may be destroyed by passing a current of chlorine gas through the fluid, after which, the fluid may be filtered. The chlorine sometimes gives a green tinge to the fluid, by boiling the gas will be expelled, and the fluid rendered colourless.

"It should be recollected that these repeated boilings will tend to evaporate the watery part, and thus some arsenic may be precipitated. To obviate this, distilled water shouldbe added, so as to keep up the original quantity of the solvent. If no traces of arsenic can be discovered, then the filtering paste should be exposed to heat with potash, when possibly metallic arsenic will sublime."

55. *Poisoning with Foxglove. Morning Chronicle, October 30th and 31st,* 1826.—"The following case appears very interesting, and well worthy of notice, although the circumstances have not hitherto been accurately detailed. It is the first characteristic example we have read of the acute form of poisoning with digitalis; and it illustrates well the double narcotico-acrid properties of the poison. Jacob Evans, a herbalist and quack-docter, was tried at London for manslaughter, by administering to an apprentice lad an overdose of foxglove. The lad had been troubled for some time with a trivial complaint, for which his mother consulted the prisoner Evans. He recommended a strong decoction of digitalis to be taken as a laxative; and, accordingly, the lad took one morning about six ounces of a decoction prepared by the prisoner. Very soon afterwards he was attacked with sickness, vomiting, severe pains in the bowels, and afterwards with purging. Towards the afternoon he became lethargic, and slept profoundly several hours. About midnight he awoke still affected with vomiting and pain in the bowels. During the night he was seized with general convulsions. A medical man, who saw him early in the ensuing morning, found him violently convulsed, with the pupil dilated and insensible, and the pulse slow, small, and irregular. Coma soon succeeded, and death took place twenty-two hours after the drug was swallowed. On examining the body, the internal membranes of the brain were found much injected with blood, and the inner coat of the stomach was red in some parts. But the other organs were in a healthy state. The prisoner Evans was found not guilty, the judges being of opinion, that, as the friends of the deceased applied for his advice, the act did not come under the statute regarding manslaughter." —*Ed. Med. and Surg. Journ. Jan.* 1827.

AMERICAN INTELLIGENCE.

Ligature of the arteria iliaca communis, at its origin.—Professor MOTT of New York, has recently performed this operation for the cure of aneurism, which, although, but of ten days standing, occupied the whole extent of the vessel, from within the ligament of Poupart, to some distance above the origin of the internal iliac artery. The tumour was of large size, protruding the belly considerably at the iliac region; the patient suffered excruciating pain, which appeared to increase, as the tumour enlarged. Dr. Mott's incision extended from the external abdominal ring, to one or two inches above the crest of the ilium, dividing the tendon of the external oblique, and cutting through part of the origins of the internal oblique and transversalis. He then cautiously raised the peritoneûm with his fingers, and succeeded in detaching it entirely from the tumour and vessels, without doing it the slightest injury.

The artery was then examined, and the aneurismal dilation was found to cease at about half the distance between the bifurcation of the aorta and the origin of the internal iliac branches. The ligature was passed from the outside of the vessel, by the aid of the excellent instrument recommended by Drs. Parish and Hewson,* carefully avoiding the iliac vein. The protrusion of the intestines rendered this part of the operation the most difficult. After the ligature was passed around the vessel, the wound was held open in such a manner as to allow the medical gentlemen present to see, and satisfy themselves of the exact situation of the ligature, which was just below the bifurcation of the aorta into the primitive iliacs, and on the side of the sacro-vertebral promontory. The ligature was then drawn tight and secured, the pulsation of the tumour ceased, its size was much diminished, and the patient was relieved from the agonizing pain, previously unremitting.

The wound was lightly dressed and the patient put to bed; the limb of the side operated on, was cold, as might be anticipated; it was wrapped in cotton, and covered up to preserve the temperature, until the circulation should be restored. To the great surprize and gratification of the surgeon, in little more than an hour after the operation, the circulation and temperature were entirely restored, and all fear respecting the supply of blood to the limb, effectually dissipated.

No untoward circumstance has since occurred, now nearly a month, subsequent to the ligature of the artery. The patient has complained of no inconvenience, but the peculiar sensation of fullness or tension in the limb, as if the small vessels had not yet become accustomed to their new office in sustaining the great mass of the circulation for the support of the member. We heartily rejoice at the successful result of this case, for the sake of our fellow creatures, the character of the profession, and the reputation of Professor Mott, who is not more distinguished for admirable skill in operating, and the success of his practice, than for those qualities of head and heart which endear him to such as are under the necessity of submitting to the last and dreadful resort of surgery, the knife.

* See their valuable paper in the Eclectic Repertory, on ligature at the subclavian, &c.

Barton's new operation for anchylosis.—Dr. J. Rhea Barton, of this city, has recently performed a highly interesting and novel operation, for the cure of an anchylosis of the hip-joint.

John Coyle, a sailor, on the 17th March, 1825, fell through the hatchway of a vessel, a distance of six or seven feet, upon the end of a barrel. The force of the fall was sustained on the outside of his right hip; violent pain ensued, with much tumefaction, and he was compelled to retire to his hammock, where he laid for about eighteen days, when he was taken into Porto Cavello, and conveyed to the hospital. "When lodged upon his bed, he placed himself on his side, with the injured limb uppermost; drawing the thigh to a right angle with the axis of the pelvis, and the knee resting on the sound side. In this posture he continued, without any material alteration, for the space of about five months; in the meantime, enduring all the suffering attendant upon a high degree of inflammation of one of the largest joints in the human body, and unalleviated by the support of splints, or a judicious antiphlogistic course of treatment. As might naturally be expected, a rigid and deformed limb was the result of such disease, combatted only by the administration of some simple liniment."

In the following October he arrived in Philadelphia, and presented himself to Dr. Barton. He was then supported by crutches, the thigh was drawn up nearly to a right angle with the axis of the pelvis, and the knee turned inward, and projecting over the sound thigh, so that the outside of the foot presented forwards. There was considerable enlargement round the hip, which so much obscured the case as to prevent any decision as to the nature of the original injury. The general appearance of the limb was *somewhat* similar to that which results from a dislocation into the ischiatic notch; but the position in which the great trochanter stood in relation to the superior anterior spinous process discouraged such a belief. All things considered, Dr. B. "was rather inclined to the opinion that there had been neither fracture nor luxation; but that the violence of the fall had produced an extensive contusion of the round ligament and joint, and that disorganization had followed the consequent inflammation." There was not the slightest motion in the hip-joint, the thigh was fixed and immoveable, and a complete anchylosis appeared to have taken place. To test this, Coyle was admitted into the Pennsylvania hospital, and means to extend the limb were employed for several weeks, but without success.

After much reflection on the case, Dr. Barton was led to propose to his colleagues the following operation, viz. "To make an incision through the integuments, of six or seven inches in length, one-half extending above, and the other below, the great trochanter; this to be met by a transverse section, of four or five inches in extent; the two forming a crucial incision, the four angles of which were to meet opposite to the most prominent point of the great trochanter; then to detach the fascia, and, by turning the blade of the scalpel sideways, to separate anteriorly all muscular structure from the bone, without unnecessarily dividing their fibres. Having done this, in like manner, behind and between the two trochanters, to divide the bone transversely through the great trochanter, and part of the neck of the bone, by means of a strong and narrow saw, made for the purpose; this being accomplished, to extend the limb and dress the wound. After the irritation from the operation shall have passed away, to prevent, if possible, by gentle and daily movement of the limb, &c. the formation of bony union; and to establish an attachment by ligament only, as in cases of ununited fractures, or artificial joints, as they are called."

In favour of the operation, Dr. B. urged the following arguments:—"That the anatomy of the part did not present any insurmountable obstacle to it. The fear of cutting into a joint was not to be entertained here, since, from previous disease, all the characteristics of a joint were gone; synovial membrane destroyed; cartilages absorbed; and an amalgamation of the head of the femur with the acetabulum, had taken place. That the shock to the vital system would not, probably, be greater than is frequently endured from accidental injuries, and other operations. That, if the opinion commonly assigned as the cause of the formation of false joints, after fractures, be true, such as frequent motion in the broken ends of the bone, a deficiency of tone in the system, &c. these agents could be resorted to with promising results.

"In order to decide the important question, as to the benefit which the patient might reasonably be expected to derive from such an operation, it was necessary to consider how nearly a joint, thus artificially formed, would resemble, in its construction and functions, the natural articulation. What change the divided ends of the bone would undergo; whence would be derived its cartilaginous surfaces, its ligaments, its capsule, and its synovia; and, finally, what was to restrain its undue motions. My hopes of improving his condition, were founded upon the following facts and observations in relation to these points. That a bone, once divided, in a person otherwise healthy, must again unite, either by bone or by ligament; no case, to my knowledge, being on record, where a broken bone remained always afterward destitute of attachment between the divided extremities; except in cases where one of the fragments has been so small, or so scantily supplied with blood, as to be unable to contribute its part in the restorative process; being sufficiently vascular only to retain its own vitality, as in case of the separation of the head of a bone. If, therefore, ossific union should be arrested, ligamentous adhesions would maintain the connexion. Writers observe, and it is confirmed by my own experience, that when a fracture does not become consolidated, in the course of time, the rugged edges are removed by absorption; the separated ends become condensed, smooth, and polished, and tipped with a kind of cartilaginous substance; they are likewise inclosed within a sort of capsule. Observation has also proved to me, that this ligamentous structure, formed around and connecting the ends of an old fracture, is possessed of great strength; so much so, that I have, in several instances, witnessed persons sustaining the entire weight of their bodies on the ligaments of a false joint, requiring only lateral support to the limb. The freedom and latitude of motion, in such cases, and total insensibility to pain, after a sufficient lapse of time, I had also witnessed, and were encouraging arguments. In the operation here proposed, no such great strength of ligaments as will support the body, would be required; since, from the *transverse* section of the trochanter, bone will rest against bone, and strength in them sufficient only to prevent dislocation, would be necessary. From my inquiries into the manner in which this joint was to be lubricated, I did not expect that a synovial membrane and fluid, in all their characters, would be generated; but ample proofs were not wanting, of the immediate resources of nature in defending parts from injurious friction, in whatever point of the body it might be required, either by an exhalation from the adjacent structure, or by the intervention of a bursa. In the common false joint, where motion is discouraged as much as possible, sufficient moisture is there exuded to prevent painful attrition. It might reasonably be expected, therefore, that where motion was continual, the lubricating moisture would be more abundantly exhaled. In ununited fractures, the false joint is uncontrollable, because there are no muscles specially adapted for its restraint; but in the joint thus to be formed, *the will* alone must influence its movements; since nearly all of the muscles which exercised their control over the original joint, would be carefully preserved, to have a similar power over this; which is, in fact, a mere transfer of the point of articulation and resistance, from the head of the bone in the acetabulum, to the upper end of the shaft of the femur, against the great trochanter.

"Although I did not think it essential to the melioration of my patient's condition, that the ends of the bone should at its section undergo any change, further than by the absorption of the asperities, I did believe, that nature would not passively witness my labours to effect what she has so often herself endeavoured, unaided by art, to accomplish; but that she would be ready to co-operate with me, and to extend to completion, that which human art alone would be incapable of—the formation of a new and useful joint, as a substitute for that which disease had annihilated, either by the conversion of the trochanter into a socket, or by some more wise design. Dissections of old luxations, and of fractures, near joints, present many ingenious and wonderful alteration of original, and depositions of new structure, to restore the functions and uses of parts impaired by accidents and disease. All authors notice these attempts at restoration. Sir ASTLEY COOPER, in his 'Treatise on Dislocations and Fractures of the Joints,' has particularly mentioned them, and given many interesting plates, illustrative of nature's unassisted achievements. Such circumstances strongly encouraged me in the experiment, and were considered as auguries of a favourable result.

"These views were fully explained to my colleagues, and were accompanied by the assurance, that my patient had been fairly apprised of his present condition, and of the nature and intentions of the operation proposed; that he had not merely acceded to it, but that, after placing his sufferings, the difficulties, risks to life, the chances of failure, and the dangers eventually of aggravated lameness, in the strongest and most exaggerated light, he had expressed his willingness to endure any pain, or duration of suffering, and to subject himself to all hazards, for the remotest prospect of relief."

Accordingly, on the 22d of November, 1826, assisted by Drs. HEWSON and PARISH, Dr. BARTON proceeded to operate. "The integuments and fascia being divided and raised, the muscles in contact with the bone, around part of the great trochanter, were carefully detached, and a passage thereby made, just large enough to admit of the insinuation of my fore-fingers, before and behind the bone; the tips of which now met around the lower part of the cervix of the femur, a little above its root. The saw was readily applied, and, without any difficulty, a separation of the bone was effected. The thigh was now released, and I immediately turned out the knee, extended the leg, and placed the limbs side by side; by a comparison of which, in reference to length, the unsound member betrayed a shortening of about half an inch. This might have been caused partly by a distortion of the pelvis. Not one blood-vessel required to be secured. Union by the first intention was not attempted; the lips of the wound were only supported by adhesive plaster and slight dressings. The patient was put to bed, and DESAULT's splints were applied, to support the limb.

"The operation, though severe, was not of long duration, it being accomplished in the space of about seven minutes.

"In the evening, the patient suffered great pain, and was much prostrated; his pulse feeble, stomach irritable, with great restlessness. Opium, grs. ii. were given.

"Nov. 23, (following morning.) Vomiting inordinate; had a bad night; pulse feeble and irritable; limb painful, particularly along the fore-part of the thigh; no nourishment retained. Prescriptions, during the day, opium and soda water; in the evening, opium and camphor, neutral mixture, sinapism over the epigastric region; which afforded him much relief. Some hæmorrhage from the wound.

"24th. Irritability of the stomach much allayed—pulse still frequent and feeble. Examined the wound superficially—no union—lips of wound much swollen and everted—very painful. Prescriptions—opium, and cordial nourishment."

From this period the patient's limb and health gradually improved without the occurrence of any thing worthy of note. After the twentieth day from the operation, "the limb was cautiously moved in such directions as resembled the natural movement of the sound hip-joint; but in doing this, I was careful never to use such violence, to continue it so long at a time, or to repeat it so often, as to occasion any permanent irritation. A sufficient time was always allowed, for the patient to recover from the soreness of the last motions, before the limb was again disturbed. At first, it was necessary to allow an interval of several days between the movements, in order to obtain a subsidence of the soreness. In the course of a short time, however, the part became more insensible to pain from this disturbance, and the limb was more frequently moved."

Five weeks after the operation, the patient was requested to exert his muscles daily, in slightly flexing, extending, and rotating his thigh. "This he accomplished without difficulty, and, after a little practice, without pain. As an auxiliary step, he was occasionally propped upright in bed, so that his pelvis might be at an angle with his thigh."

Sixty days after the operation, the wound had entirely healed, and all appearances of inflammation had disappeared. With careful assistance the patient left his bed, and, "aided by crutches, stood erect, both feet reaching the floor; he thinks he bore ten or twelve pounds weight on the weakened limb for a few minutes; made an attempt to advance the leg, and did so exclusively by muscular exertion; then rested on the sound side, and rotated the knee, and says, without pain. He was then placed in a wheeled-chair, and moved to the fire, where he sat, with both feet down, for about an hour; then retired to bed."

The next day, in consequence of his exertion, the limb felt a little sore, and "considerable fluctuation was discoverable along the direction of the rectus femoris; and, on the subsequent day, a quantity of synovial fluid escaped by a very small sinuous opening in the cicatrix, unaccompanied by pain, or other inconvenience. This discharge evidently came from the theca of the rectus femoris, and appeared to have been secreted in such superabundance, in consequence of the great excitement produced in this structure, after having been so long in a state of inaction—patient in other respects doing well."

Seventy days after the operation, the "patient dressed himself, and walked, with the assistance of his crutches, to the managers' apartment, a distance of about one hundred and fifty feet. Dr. Hewson and myself now examined him particularly, to ascertain the muscular control he possessed over this newly-formed joint. We found him able to perform flexion and extension, abduction and adduction, rotation inward and outward, and able to cross the opposite foot; he had, then, in fact, regained every movement which the limb originally possessed."

Since that period, the patient's general health and the ability to use his limb has gradually improved without any remarkable occurrence. The writer of this notice saw him on the 16th of April last, nearly five months after the operation. He was then walking about the Hospital garden, with the aid of two short sticks. He walked several steps, by request, without any aid; but the bearing of his whole weight upon the limb still gave him some pain, and caused him to limp. He rotated his affected limb inward and outward, and flexed it upon the pelvis, he could also perform abduction and adduction. The affected limb was somewhat shortened. Around the head of the bone and the acetabulum there was a considerable accumulation of bony matter. Upon placing the hand on the spot where the bone had been divided, and moving the limb, no grating sensation was perceptible.

Having succeeded in forming a joint in this case, Dr. B. is of opinion that the same principles are applicable to the formation of new joints in other parts of the body where the natural motion has been lost. "The most serious evil is sustained by the loss of the hip, knee, shoulder, elbow, great toe, and finger joints, and of the lower jaw; and these, I believe, may all come within the reach of amendment by an operation, if the muscles which move these respective joints are in a sound and efficient state. If they have been lost, it would be palpably wrong to form a joint, since its unrestrained motion would be more troublesome than a rigid limb. A transverse section of the bones would be proper, if the operation were to be attempted at the shoulder, knee, fingers, or toes; but an angular division would be necessary at the elbow, in order to preserve some resemblance to the natural joint at this part."

The operation will only be justifiable, Dr. B. very judiciously observes, "where the patient's general health is good, and his constitution is sufficiently strong; where the rigidity is not confined to the soft parts, but is actually occasioned by a consolidation of the joint; where all the muscles and tendons, that were essential to the ordinary movements of the former joint, are sound, and not incorporated by firm adhesions with the adjacent structure; where the disease, causing the deformity, has entirely subsided; where the operation can be performed through the original point of motion, or so near to it, that the use of most of the tendons and muscles will not be lost; and, finally, where the deformity, or inconvenience, is such, as will induce the patient to endure the pain, and incur the risks of an operation."

Dr. B. has published in our esteemed cotemporary, the North American Medical and Surgical Journal, an account of his operation, to which we are indebted for most of our details.

Operation for the cure of abscess in the chest.—We had the satisfaction of witnessing a very interesting and successful operation a few weeks since, performed by Dr. MOTT, in the presence of Drs. VANDEBERG and PROUDFOOT, for the cure of an abscess of the chest. The patient was a very interesting girl, about sixteen, who had some time before suffered from an attack of pleurisy, which for want of proper depletion had been followed by the formation of matter in the chest. The sternum, at length, became affected, and caries ensued, forming an opening through this bone, near the attachment of the third rib, though rather above it, whence matter was discharged in variable quantities. The effects of this suppuration were becoming very serious, and the life of the girl must evidently have sunk under the malady. She was sent to New York for the purpose of being relieved by an operation, should it be deemed practicable to operate with advantage. A steel sound when passed through the opening in the sternum, could be introduced obliquely downwards, as far as an inch or more, posterior to the junction between the sixth rib and its cartilage, and judging by the sensation, the inferior part of the sinus was directly against this rib. Dr. Mott, then made an incision under the left breast, for three or four inches, laying bare the rib, which then gave a more distinct intimation of the extremity of the abscess when the sound was employed. He then cut carefully along the upper edge of the rib, detaching it from the subjacent texture; but the pleura appeared to be altered, or a substance formed behind it, which, when cut, seemed to have a gristly firmness. In order to secure the desired result, of obtaining a dependant opening to this abscess, he sawed out a triangular portion of the rib; then cutting through the morbid texture abovementioned for about the fourth of an inch, he laid bare the extremity of the sound, introduced through the sternum.

From this inferior opening the sound could be introduced, nearly horizontally towards the spine, passing over the pericardium and heart. The greatest quantity of matter flowed from this part of the chest. Adhesion had apparently taken place between the pleura pulmonalis and costalis throughout the chest, beyond the limits of these sinuses. By this operation a beautiful and estimable young woman has been restored to health and society, who otherwise must have lingered for a time in hopeless anguish, and sunk into an untimely grave.

Pulsation of veins.—Our friend, Dr. WILLIAM RUSH, has favoured us with the following interesting communication. We believe there are but few similar cases recorded.

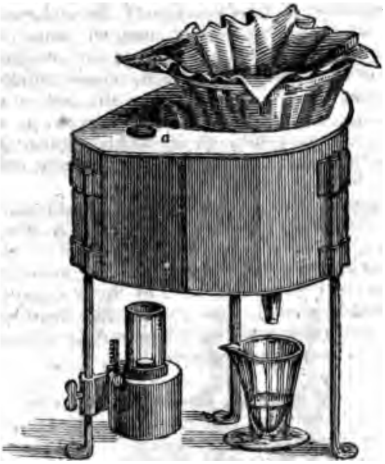
The record of a case of venus pulsation, which came under my observation some years ago, may open to the physiologist a new field for speculation upon the causes which assist in the circulation of the blood. Through the medium of your journal it is offered to the consideration of those who may be engaged in the further investigation of this important and interesting function of the human system.

In the month of October, 1821, a child of Mr. C. V. of this city, aged about thirteen years, was attacked with bilious fever. He was ill for a long time, but eventually his disease left him in a very debilitated state. He was remarkably emaciated—so much so, that curiosity one day induced me to examine his skeleton-like arms, when upon a closer view, I saw the superficial viens upon the back of his hands distinctly pulsate, synchronous with the beat of the heart and arteries. I observed this phenomenon for five successive days. It was less evident as the child advanced in convalescence, and when he recovered his strength and his flesh, the pulsation of the veins entirely ceased.

An easy mode of obtaining Meconic Acid. By R. HARE, M. D. &c. &c. &c.—If to an aqueous infusion of opium we add sub-acetate of lead, a copious precipitation of meconate of lead ensues. This being collected by a filter, and exposed to sulphureted hydrogen, meconic acid is liberated. The solution is of a reddish amber colour and furnishes by evaporation, crystals of the same hue. A very small quantity produces a very striking effect in reddening solutions of peroxide of iron.

Instead of sulphureted hydrogen, sulphuric acid may be used to liberate the meconic acid. The presence of the former, in excess, does not seem to interfere with the power of reddening ferruginous solutions. But any excess of sulphuric acid may be removed by whiting, which is not acted upon sensibly by the meconic acid. Yet the acid procured in this way, did not crystallize so handsomely, or with so much facility, as that obtained by sulphureted hydrogen.

Filtration facilitated by Heat. By R. Hare, M. D. &c. &c. &c.



In the case of solutions, which, being saturated at a boiling heat, are capable of yielding crystals on cooling, in order to remove any feculent matter which contaminates the product, it is often important to resort to filtration. Yet as, by the premises, such liquids yield crystals, by refrigeration, unless they be kept hot while on the filter, it soon becomes choked by crystalline particles. In order to preserve, under such circumstances, a proper temperature, I contrived the apparatus represented by the above figure.

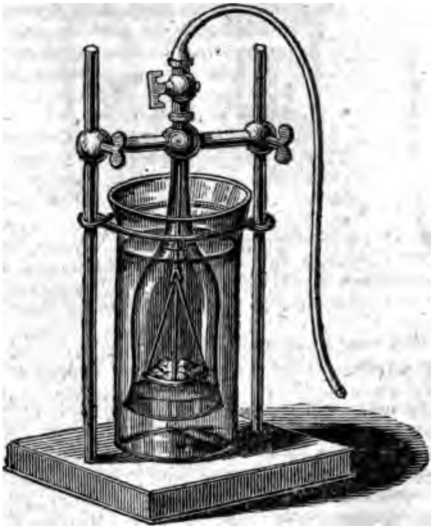
It consists of a case of tinned iron, which, on the side where it has the larger diameter, surrounds a cone of the same materials shaped like the body of a common funnel. On the other side of the case, where it has the smallest diameter, a smaller and sharper cone is included, the position of which is the inverse of the first mentioned; so that the apex of the larger one terminates below the bottom of the case, while that of the smaller rises through the top at *a*.

The cones are soldered into the case so as to make with it water tight junctures, and so that they may be surrounded by, and in contact with, any liquid which the case may contain. Supposing the case to be filled with boiling water, by means of an aperture left for that purpose, and that a lamp be placed under the little chimney formed by the smaller cone, it must be obvious that the temperature of ebullition may be supported in the water of the case and in the larger cone of tinned iron which it surrounds. Consequently if, within the latter, a glass funnel containing a filtering paper be placed, the temperature of any boiling liquid poured upon the filter, will be preserved with little diminution, until it passes through the filter, and falls into the vessel placed below to receive it.

In order to obtain prussiate or cyanide of mercury, red precipitate is boiled in water with Prussian blue. The resulting solution contains the desired compound, and if passed through a filter surrounded by the heated case as above described, yields, on cooling, cream coloured crystals, each in the form of a four-sided prism.

In separating the chlorate from muriate of potash, this contrivance is very useful. The former, as it precipitates from the solution, is usually more or less contaminated by foreign matter; being generally mingled with bi-carbonate of potash, formed by a union of one portion of the pearl-ash, with the carbonic acid liberated from another portion, by the chloric and muriatic acids. If while thus situated, a saturated solution of the mixed precipitate be made in boiling water, as soon as it passes the filter, the chlorate separates in crystalline plates, of a silvery whiteness, which, during their subsidence are beautifully irridescent.

Self-regulating Reservoir, for Sulphureted Hydrogen and other Gases.[*] By R. HARE, M. D. &c. &c. &c.



The preceding figure, represents a self-regulating reservoir for hydrogen gas, (whether pure or sulphureted;) or for nitric oxide, or carbonic acid gas.

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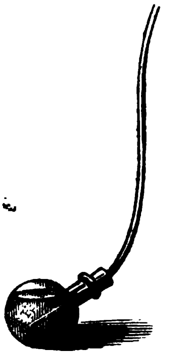
[*] This apparatus has been described in the Franklin Journal as a reservoir for pure hydrogen, in order to illustrate the application of that gas in the arts. It is here described as a reservoir for sulphureted hydrogen, being as such very useful in pharmacy; as will appear from the succeeding article on prussic acid. Many of the vegetable acids form compounds with lead, from which they may be liberated by the well-known action of sulphureted hydrogen. The usefulness of the gas in question, in detecting metallic poisons, is universally admitted.

This very perspicuous engraving, requires but little to be said in explanation of it. Suppose the glass jar without, to contain diluted sulphuric acid; the inverted bell, within the jar, to contain some sulphuret of iron, supported on a tray of copper, suspended by wires, of the same metal, from the neck of the bell. The cock being open, when the bell is lowered into the position in which it is represented, the atmospheric air will escape, and the acid, entering the cavity of the bell, will, by its re-action with the sulphuret, cause sulphureted hydrogen gas to be evolved rapidly. As soon as the cock is closed, the hydrogen expels the acid from the cavity of the bell, and consequently, its reaction with the sulphuret is prevented, until there be reason for drawing off another portion of the gas. As soon as this is done, the acid re-enters the cavity of the bell, and the evolution of hydrogen is renewed, and continued, unless arrested, as in the first instance, by preventing its escape, and consequently causing it to displace the acid from the interior of the bell.

Convenient Process for Prussic Acid. By R. Hare, M. D. &c. &c. &c.—Upon the principle of the apparatus described in the preceding article, I have devised an extemporaneous method of producing prussic acid from a solution of the cyanide of mercury, by sulphureted hydrogen, agreeably to the method of Vauquelin.



Suppose the little flask here represented to be about half filled with the solution, and the flexible pipe to proceed from a self-regulating reservoir of sulphureted hydrogen, represented in the preceding article: it must be evident that the gas flowing into the cavity of the flask from the orifice of the pipe, must enter the solution. If not absorbed as rapidly as it may be yielded, the excess must bubble up through the solution; the cork being meanwhile loosened to allow the atmospheric air to escape. The expulsion of the atmospheric air having been completed, and the cork pushed into the neck of the flask, so that no gas can escape, gas will continue to enter the flask as fast as it is absorbed. But if it be generated in the reservoir faster than the solution can absorb it, the excess must remain in the reservoir, and contribute to depress the acid so low in the bell glass as to diminish the quantity of the sulphuret on which it can act. Finally, when the solution becomes saturated, the gas generated in the bell, must fill it, and thus by usurping the place of the acid, prevent any further evolution of gas.

Cyanide of mercury, consisting of cyanogen and mercury, the metal unites with the sulphur of the sulphureted hydrogen, and precipitates as a sulphuret. The hydrogen forms prussic or hydrocyanic acid with the cyanogen. The resulting acid, being agitated with ceruse, in order to remove any excess of sulphureted hydrogen, may be obtained pure by filtration.

The solution should contain 60 grains of cyanide for every ounce of water.

It must be evident that a phial, or any small vessel having a mouth suitable for a cork, may be used in place of the flask above represented.

Operation for re-establishment of the Urethra.—Dr. DAVID L. ROGERS, of New York, has recently operated with complete success upon a patient in the following condition:—In consequence of a prolonged gonorrhœa, a gentleman, aged forty-five, was afflicted with numerous strictures, which at length entirely prevented the flow of urine, and rendered it impossible to introduce a catheter. Dr. R. made an incision through the perineum two inches in length down to the bulb of the urethra, which was found to be very much contracted, and from the posterior part of the bulb throughout the whole of the membranous portion to the prostate gland, the urethra was so much changed in character as to resemble a small cord, its cavity being too small to allow of the introduction even of the finest probe. A straight sound was then passed through the anterior part of the urethra, and the strictures above the bulb forced; the end of the staff was then cut upon, the remainder of the tube being impervious as before mentioned. A puncture was made into the urethra near the prostate, for the evacuation of the urine. The portion of urethra between the end of the staff and this puncture, about two inches in length, was laid open, and a catheter passed into the bladder. The edges of the wound were then brought together over the catheter and secured. The catheter was kept in the bladder for three weeks; it was withdrawn on the sixth of April; the patient continues entirely well, and to all appearance the operation has been completely successful.

Denarcotised Opium.—Since the account of this preparation went to press, we have had further opportunities of using it, and with the most satisfactory results. It has likewise been used by several of our medical friends, and, as far as we can learn, they bear ample testimony in its favour. A quantity of the article has been prepared by one of our most enterprising and skilful manufacturing chemists, Mr. J. P. WETHERILL, and is for sale at Mr. S. P. GRIFFITT'S. As strong evidence that the injurious properties of opium reside in the narcotine, we may mention that Mr. Wetherill informs us that he was attacked with violent head-ache and other distressing symptoms, in consequence of going, though only for a few minutes, into a room where the ether in which the narcotine had been dissolved, was evaporating; two other persons who went into the same room, experienced precisely similar effects.

Case of Iliac Passion successfully treated. By WILLIAM P. DEWEES, M. D. &c.—Mrs. M—— was attacked on Easter Sunday, 1824, with an intermittent fever, which continued for a week. During the greater part of the summer, her bowels were alternately in a costive or lax condition, with a pretty constant pain about the navel. She was regular in her menses, forty-two years of age, and mother of nine children.

On the 9th of the following September, she was attacked with vomiting and pain in the abdomen, bowels costive; she took a large dose of aloes, but it did not operate. A variety of purgative medicines were given, and injections frequently but unavailingly employed. Nothing would sit upon her stomach, and the injections were returned the instant they were administered. She continued in the situation above described until the morning of the 13th, when Dr. Dewees was called in. He found her labouring under severe pain in the umbilical region, with incessant vomiting of *fæcal* matter—her skin was cold, shrunk, and wet with perspiration; the pulse frequent, small and tense—bowels constipated.

He ordered her to be bled in a sitting posture, until she should become faint—a drop of croton oil every hour, until it should operate; and warm molasses and water to be thrown up the rectum, syringe full after syringe full, until the bowels were filled.

11 o'clock, A. M.—Much relieved; lost about twenty ounces of blood, which was very sizy, before she became faint—she had swallowed four drops of croton oil, and received six pints of the molasses and water. The bowels yielded almost immediately after the bleeding and injections, and she passed large bilious stools which were without smell, and of a yellow colour. Two drops of the croton oil were ordered to be taken immediately; and in case of a return of pain, that she should lose more blood, and afterwards an injection of a gill of water and a tea-spoonful of laudanum be administered.

5 o'clock, P. M.—Free from pain; had not vomited since the morning; the croton oil procured several more loose stools—the laudanum was not used, nor the bleeding resorted to, as she remained free from pain—ordered a wine-glassful of weak chicken water every hour or two, and toast tea in small quantities for drink.

September 14.—The oil operated pretty freely; free from pain and fever—diet and drinks the same.

September 15.—The patient was able to set up in bed, though she had passed rather an unquiet night, from her bowels being several times moved. During the night, she passed a ball of the shape and size of a pullet's egg, together with many small stones, seven of which I received; the rest were not preserved. These stones were of an irregular shape, pretty highly polished, and of a fine brown colour, very much resembling the seed of the tamarind, but streaked with bright yellow. The large mass consisted of layers, about the thickness of an egg-shell. They are deposited in the Wistar museum.

16th.—Free from all complaints, but still weak; passed another small stone.

17th.—Perfectly well.

Wart on the Adnata.—Our esteemed and talented friend, Dr. Physick, informs us that he has recently met with an instance of a tumour resembling a genuine wart occurring on the adnata. It was situated towards the exterior angle of the eye, about two lines from the cornea. It did not follow the motions of the conjunctiva, but adhered firmly to the subjacent parts. The irritation caused by the eyelids passing over it, produced uneasiness, and the patient, a gentleman from Maryland, was anxious to have it removed, and applied to Dr. Physick for that purpose. Dr. Physick applied to it the solid nitrate of silver, and after several applications it was entirely destroyed, and has not returned.

Case of intermittent in a child of six weeks, cured by arsenic. By William P. Dewees, M. D. &c.—On the 3d December, 1820, I was called to visit the child of Mr. J. P. aged six weeks; about two weeks before I saw it, it was attacked with a tertian, which after a few paroxysms, changed into a quotidian. The chill took place about 10 o'clock, A. M. and would continue nearly two hours, fever would succeed, which was followed by sweat. During the chill, the child was very ill, lay almost motionless, and refused every thing. Bowels regular, a little sickness of stomach occasionally. I prescribed arsenic in the following manner:—

℞. Sol. Mineral Fowl. ʒj.
Aq. Font. ʒxij.

Six drops to be given every four hours.

As soon as there was any evidence of the chill coming on, three drops of laudanum were ordered to be administered.

On the third day after commencing with the arsenic, the duration of the chill was much diminished, and the intensity of the fever abated; and in four days more, entirely left it. The little patient's bowels were occasionally opened by castor oil.

The mother of the child, who resided during the summer and fall at Bush-hill, was severely affected with fever and ague up to the time of her labour, at which time it ceased. Shall we consider this a case in which the remote cause was conveyed by the mother during gestation? Or shall we merely look upon it as an extraordinary case happening to so young a subject, and at a season of the year when this disease is of very rare occurrence?

Compound Dislocations of the Astragalus.—In our original department we have inserted a case of compound luxation of the astragalus. This case is particularly interesting, not only on account of the rarity of the accident and peculiarity of the treatment, but especially from the bone having been preserved. The older surgeons thought the accident one of so serious a nature as to require immediate amputation; but more recent observations have proved that the foot may be saved, but in most instances it has been thought necessary to extirpate the astragalus. Boyer mentions that Ferrand performed this operation on an invalid soldier, who was in the habit of carrying the bone in his pocket, and that Desault performed it three times with success. The late professor Wistar used to mention in his lectures, a case which occurred in this city, in which the astragalus was removed, and in the 20th No. of the New York Medical and Physical Journal, a case is recorded in which the bone was extirpated by Dr. Stevens; in both these instances a considerable degree of motion of the tibia on the foot was preserved.

Sir Astley Cooper has seen but one instance of compound luxation of the astragalus, and in that the operation of amputation was performed; in his paper on dislocations,* however, he details two cases which were under the care of Mr. Henry Cline. In the first of these, the bone was preserved, in the second the limb was amputated.

Our friend, Dr. J. Rhea Barton, has favoured us with the following account of a case which occurred at the Pennsylvania Hospital.

On the 23d of September, 1816, James Cox was brought into the Pennsylvania Hospital for the treatment of a severe injury occasioned by a fall. It proved to be a dislocation of the astragalus. All attempts to reduce it were unavailing, and nature was entrusted with the care of it. The projection of an angle of the bone was so great that the integument could barely support its continuity. Much swelling ensued and continued for some time. The pressure of the bone soon caused ulceration of the skin, and part of the astragalus came into view. No exfoliation took place; but vigorous granulations speedily covered the denuded bone—these coalesced and cicatrized over it, leaving the deformity as conspicuous as it was immediately after the accident. But the patient was able to walk and to use his ankle joint apparently with little or no inconvenience. Discharged well on the 8th March, 1817.

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* Surgical Essays.

MORTALITY

IN SEVERAL OF THE PRINCIPAL CITIES OF THE UNITED STATES, FOR THE YEAR 1826.

The following bills of mortality have been taken from Poulson's American Daily Advertiser, (for which they were expressly arranged,) with some alterations.

RETURN OF DEATHS IN THE CITY OF BOSTON,

For the Year, 1826,

SPECIFYING THE SEXES, AGES, AND DISEASES.

Deaths in each month.	Males.	Females.	Total.
January,	50	47	97
February,	42	46	88
March,	53	53	106
April,	47	54	101
May,	62	52	114
June,	63	36	99
July,	57	45	102
August,	72	61	133
September,	70	58	128
October,	58	60	118
November,	52	41	93
December,	39	36	75
Totals,	665	589	1254

AGES.	
Under 1 Year,	311
From 1 to 2	123
2 to 5	75
5 to 10	45
10 to 20	50
20 to 30	137
30 to 40	158
40 to 50	117
50 to 60	73
60 to 70	61
70 to 80	45
80 to 90	21
90 to 100	4
Unknown,	34
Total,	1254

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Accidental	14
Abscess	5
—— Lumber	1
Apoplexy	10
Asthma	1
Bleeding—Lungs	1
Burns	11
Bloody Flux	1
Consumption	231
Croup, or Hives	24
Canker	25
—— Rash	4
Cancer	5
Childbed	12
Cholera Morbus	5
Carried over	350

Brought over	350
Cholera Infantum	12
Colic	4
Dysentery	47
Dropsical Diseases	32
Dropsy in the Brain	29
——— Heart	1
——— Chest	9
Delirium tremens	5
Debility	18
Disorders of the Head	5
Drowned	22
Dyspepsia	1
Diseases unknown	161
Epilepsy	1
Carried over	697

Brought over	697	Brought over	1022
Fever—Bilious	11	Liver—Disease of	11
——— Brain	13	Locked Jaw	1
——— Inflammatory	6	Lethargy	1
——— Lung	41	Mortification	9
——— Putrid	1	Measles	10
——— Scarlet	6	Old Age	40
——— Slow	2	Palsy	9
——— Typhus	31	Poison	1
——— Unknown kind	9	Pleurisy	7
Frozen	1	Quinsey	5
Fistula	2	Rupture	2
Fits	45	——— of Blood-vessel	2
Gravel	4	Rheumatism	4
Gout	1	Scurvy	1
Heart—Disease of	11	Still-Born	87
Hooping Cough	23	Spasm	8
Hip-Joint Disease	1	Suicide	5
Intemperance	38	Scirrhus	1
Inflammation of the Bowels	24	Scalded	3
——— Brain	8	Scrofula	1
——— Chest	1	Teething	8
——— Liver	1	Throat Distemper	6
——— Stomach	1	Tumour	2
Inflammatory Diseases	3	Venereal	1
Infantile	40	Ulcer	2
Insane	1	Worms	4
Jaundice	5	White Swelling	1
Carried over	1022	Total,	1254

By order of the Mayor and Aldermen,

SAMUEL H. HEWES,

Superintendent of Burial Grounds.

STATEMENT OF DEATHS IN THE CITY AND COUNTY OF NEW YORK,

For the Year 1826,

SPECIFYING THE SEXES, AGES AND DISEASES.

Deaths in each month.	Adults.	Children.	Total.
January,	192	149	341
February,	278	177	455
March,	190	169	359
April,	181	141	322
May,	206	159	365
June,	165	146	311
July,	196	277	473
August,	217	337	554
September,	217	280	497
October,	255	237	492
November,	180	204	384
December,	199	221	420
Totals,	2476	2497	4973

Ages.	
Under 1 Year,	1232
From 1 to 2	476
2 to 5	350
5 to 10	180
15 to 20	253
20 to 30	618
30 to 40	628
40 to 50	483
50 to 60	330
60 to 70	202
70 to 80	132
80 to 90	71
90 to 100	15
100 to 110	3
Total,	4973

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Abscess	13
Aneurism	3
Apoplexy	69
Asphyxia	8
Asthma	14
Burned or Scalded	21
Carbuncle	1
Cancer	16
Casualty	50
Catarrh	1
Childbed	53
Cholera Morbus	23
Colic	4
Compression of the Brain	6
Consumption	820
Convulsions	282
Contusion	4
Cramp in the Stomach	15
Diabetes	1
Diarrhœa	75
Dropsy	116
——— in the Chest	45
——— in the Head	189
Drowned	63
Dysentery	193
Dyspepsia	8
Epilepsy	10
Erysipelas	13
Fever	84
——— Bilious	19
——— Bilious Remittent	20
——— Inflammatory	7
——— Hectic	1
——— Intermittent	18
——— Puerperal	3
——— Putrid	1
——— Remittent	46
——— Scarlet	24
——— Typhus	137
Flux, Infantile	222
Fracture	12
Gout	1
Gravel	4
Hæmorrhage	15
Hæmoptysis	5
Hives, or Croup	154
Jaundice	20
Iliac Passion	1
Infanticide	2
Carried over	2912

Brought over	2912
Inflammation of the Bladder	3
——— Bowels	112
——— Brain	100
——— Chest	201
——— Liver	43
——— Stomach	2
Influenza	69
Insanity	23
Intemperance	55
Killed or Murdered	2
Locked Jaw	9
Lumber Abscess	2
Manslaughter	2
Marasmus	46
Measles	31
Menorrhagia	1
Mortification	14
Nervous Diseases	2
Old Age	201
Palsy	44
Peripneumony	57
Pleurisy	28
Pneumonia Typhoides	4
Quinsey	7
Rheumatism	6
Rupture	2
St. Anthony's Fire	5
Scirrhus of the Liver	1
Scrofula	9
Scurvy	2
Small Pox	58
Sore Throat	37
Spasms	8
Spina Bifida	1
Sprue	27
Still-Born	302
Sudden Death	13
Suicide	29
Syphilis	7
Tabes Mesenterica	132
Teething	62
Tumour	2
Vomiting Blood	1
Ulcers	6
Unknown	143
White Swelling	4
Whooping Cough	126
Worms	20
Total,	4973

Of the above mentioned Deaths, there were—

Men,	1473	
Boys,	1334	
Total Males,		2807
Women,	1003	
Girls,	1163	
Total Females,		2166
Total,		4973

Remarks of the City Inspector.

The City Inspector respectfully reports to the Board, a statement of the Deaths in the city and county of New York, for the year *one thousand eight hundred and twenty-six,* amounting to *four thousand nine hundred and seventy-three,* being *forty-five less* than the year preceding, of which number *seven hundred and forty-five* were *coloured persons.*

It is satisfactory to observe, that the cases of *Fevers* were less numerous than in 1825, and the city was generally more healthy, with the exception of infantile diseases, particularly the Whooping Cough, which was more fatal than formerly.

It is, however, much to be regretted, that cases of *Small Pox* seem to increase. When we consider the exertions which have been made by public institutions, and enlightened individuals, to counteract the spread of this loathsome and malignant disease, it must be a subject of as much wonder as of regret, to observe the continuance of it amongst us; and calls loudly upon every benevolent parent to arrest its progress, by those means which are now happily within the reach of all—*Vaccination.*

The deaths by *Consumption* were eight hundred and twenty, (one hundred and seventeen of which were people of Colour.) In this formidable disease, the males exceeded the females by nearly one hundred.

Respectfully submitted,

GEORGE CUMING, *City Inspector.*

STATEMENT OF DEATHS IN THE CITY AND LIBERTIES OF PHILADELPHIA,

For the Year 1826,

SPECIFYING THE SEXES, AGES, AND DISEASES.

Deaths in each month.	Adults.	Children.	Total.
January,	194	134	328
February,	191	148	339
March,	149	205	354
April,	190	200	390
May,	138	127	265
June,	139	186	325
July,	183	332	515
August,	153	200	353
September,	184	174	358
October,	230	167	397
November,	144	145	289
December,	122	116	238
Totals,	2017	2134	4151

AGES.	
Under 1 Year,	1150
From 1 to 2	380
2 to 5	285
5 to 10	134
10 to 15	65
15 to 20	123
20 to 30	429
30 to 40	452
40 to 50	380
50 to 60	271
60 to 70	209
70 to 80	135
80 to 90	98
90 to 100	32
100 to 110	7
110 to 120	1
Total,	4151

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Atrophy	31	Brought over	2625
Abscess	21	Fever, Hectic	7
Asthma	8	—— Scarlet	4
Apoplexy	50	—— Puerperal	9
Apthæ	2	Fungus Hæmatodes	1
Aneurism	2	Gun-shot wound	1
Anthrax	1	Gout	1
Angina Pectoris	3	Hæmorrhage	26
Bronchitis	16	Hernia	7
Burns	21	Hives	80
Consumption	587	Hooping Cough	43
Convulsions	258	Insanity	16
Colica Pictonum	2	Influenza	20
Cachexy	6	Inflammation of the Lungs	174
Catarrh	64	——— Brain	60
Cynanche Maligna	2	——— Breast	30
Childbed	5	——— Bowels	73
Caries	1	——— Liver	54
Cancer	17	——— Stomach	22
Casualties	19	——— Heart	2
Colic	11	——— Kidneys	3
Compression of the Brain	1	——— Peritonæum	7
Chorea Sancti Viti	1	——— Spleen	2
Coup de Soleil	1	——— Uterus	2
Cholera	244	Jaundice	5
Decay	13	Locked Jaw	8
Debility	277	Laudanum to excess	3
Dropsy	78	Lethargy	1
——— in the head	126	Melancholia	1
——— of the breast	38	Measles	101
Dysentery	72	Mania à Potu	55
Diarrhœa	99	Mortification and Gangrene	23
Drunkenness	28	Old Age	90
Drowned	48	Palsy	31
Disease of Hip-Joint	2	Pleurisy	18
——— of the Heart	6	Prostate Gland	1
——— of the Spine	4	Rheumatism	12
Death by Opium	1	Sore Throat	9
Dyspepsia	3	Scirrhus	2
Diabetes	1	Scrofula	19
Epilepsy	16	Syphilis	4
Erysipelas	8	Stone	2
Fracture	6	Spasms	5
Found dead	13	Salivation	1
Fever	89	Suicide	13
—— Bilious	119	Small Pox, (natural)	3
—— Typhus	93	Sudden	66
—— Remittent	75	Still-Born	306
—— Intermittent	23	Tumours	6
—— Inflammatory	2	Tympanitis	1
—— Nervous	11	Teething	12
Carried over	2625	Carried over	4067

Brought over	4067
Violence	6
Worms	6
Vomiting	1
Carried over	4080
Brought over	4080
Ulcers	3
Unknown	68
Total,	4151

Of the above-mentioned Deaths, there were—

Males of 20 years and upwards	1055	
Ditto, under 20 years	1142	
		2197
Females of 20 years and upwards	985	
Ditto, under 20 years	962	
		1947
Children principally under one year, whose sex is unknown		7
Total,		4151

Of the foregoing Deaths, 337 died in the Alms-House, and 529 were People of Colour.

The cases of small-pox were brought to the city from New York.

Agreeably to the Returns received at the Health Office from *one hundred and twenty-six* Practitioners of Midwifery, there were born, in the City and Liberties of Philadelphia, from the first of January, to the thirty-first of December, 1826, both days inclusive,

Male Children	3526
Female Ditto	3214
Making the Total Number of BIRTHS	6740
The whole Number of DEATHS was	4151
Difference between the *Births* and *Deaths*	2589

By order of the Board of Health,
JOSEPH PRYOR, *Clerk.*

STATEMENT OF DEATHS IN THE CITY OF BALTIMORE,
For the Year 1826.

SPECIFYING THE SEXES, AGES AND DISEASES.

Deaths in each month.	Males.	Females.	Total.
January,	112	94	206
February,	93	87	180
March,	70	63	133
April,	77	62	139
May,	77	56	133
June,	69	56	125
July,	165	112	277
August,	88	87	175
September,	91	45	136
October,	100	75	175
November,	61	54	115
December,	74	54	128
Totals,	1077	845	1922

AGES.	
Under 1 Year,	509
From 1 to 2	171
2 to 5	138
5 to 10	71
10 to 21	117
21 to 30	178
30 to 40	230
40 to 50	178
50 to 60	131
60 to 70	88
70 to 80	59
80 to 90	41
90 to 100	9
100 to 110	2
Total,	1922

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Abscess	2	Brought over	1071
Apoplexy	3	Liver Complaint	26
Asthma	2	Locked Jaw	2
Burns	5	Mania	5
Cancer	10	Manslaughter	2
Casualty	28	Marasmus	10
Childbed	19	Measles	3
Cramp colic	11	Mortification	5
Colic, Bilious	6	Mumps	1
Catarrh Bilious	1	Murder	2
Cholera Infantum	119	Old Age	107
——— Morbus	11	Organic Disease of the Heart	3
Consumption	306	Palsy	14
Convulsions	55	Piles	1
Croup	28	Pleurisy	36
Dropsy	62	——— Bilious	1
——— in the Head	22	Pneumonia	7
Drowned	29	Poison	4
Dysentery	47	Quinsey	3
Dyspepsia	2	Rheumatism	3
Erysipelas	2	——— Inflammatory	1
Fever, Catarrhal	60	Scald	4
——— Bilious	113	Scrofula	1
——— Inflammatory	1	Spleen	1
——— Intermittent	6	Small Pox*	2
——— Typhus	44	Still-Born	97
Gout	1	Sudden	20
Gravel	1	Suffocation	3
Hæmorrhage	12	Suicide	4
——— Uterine	1	Teething	8
Inflammation	10	Thrush	1
——— of the Brain	12	Ulcerated sore throat,	2
——— of the Bowels	1	Varioloid†	2
——— of the Lungs	5	Variolous	1
——— of the Throat	9	Unknown, adult	62
Infanticide	1	——— Infantile	355
Intemperance	21	Whooping Cough	46
Jaundice	3	Worms	7
Carried over	1071	Total,	1922

Of the Deaths above enumerated, 526 were people of colour—of whom 429 were *free*, and 97 were *slaves*.‡

By order of the Board of Health,
DAVID HARRIS, *Secretary.*

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* Died at the Hospital, (in May last,) to which place they had been removed immediately after the disease made its appearance.

† One died at the Hospital, March last; all the cases were introduced by vessels arriving at this port.

‡ The coloured population of this city, in 1820, according to the United States Census, was 10,294 *Free*, and 4,387 *Slaves*.

STATEMENT OF DEATHS IN THE CITY OF CHARLESTON, (S.C.)

For the Year 1826.

SPECIFYING THE SEXES, AGES AND DISEASES.

Deaths in each month.	Males.	Females.	Total.	AGES.	
January,	19	21	40	Under 2 Years,	181
February,	21	22	43	From 2 to 10	54
March,	15	25	40	10 to 20	44
April,	20	29	49	20 to 30	86
May,	28	22	50	30 to 40	129
June,	34	38	72	40 to 50	76
July,	54	35	89	50 to 60	69
August,	61	33	94	60 to 70	57
September,	66	40	106	70 to 80	28
October,	53	34	87	80 to 90	29
November,	24	27	51	90 to 100	6
December,	25	18	43	100 to 110	5
Totals,	420	344	764	Total,	764

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Abscess,	4	Brought over	504
Accident,	20	Hernia,	1
Angina Pectoris,	1	Hooping Cough,	10
Apoplexy,	7	Hydrophobia,	2
Asthma,	8	Inflammation of the Brain,	8
Cancer,	2	———— of the Lungs,	4
Carbuncle,	1	Influenza,	5
Carditis,	1	Insanity,	2
Catarrh,	15	Intemperance,	13
Child-bed,	8	Jaundice,	5
Colic,	4	Leprosy,	1
Cholera Morbus,	2	Liver Complaint,	15
Constipation,	1	Locked Jaw,	18
Consumption,	124	Old Age,	65
Contusion,	1	Palsy,	11
Convulsions,	34	Pleurisy,	10
Cramp,	6	Pneumonia,	1
Croup,	9	Rheumatism,	1
Debility,	32	Rupture,	1
Diarrhœa,	63	Scrofula,	1
Diseased Ovaria,	1	Small Pox,	4
Dropsy,	71	Sore Throat,	29
Drowned,	11	Spasm,	5
Dysentery,	5	Sudden Death,	11
Dyspepsia,	2	Suicide,	7
Fever, Bilious,	17	Syphilis,	2
—— Country,	26	Tetanus,	1
—— Nervous;	6	Teething,	23
—— Worm,	21	Thrush,	2
Gravel,	1	Violence,	1
Hæmorrhage,	1	Wen,	1
Carried over	504	Total,	764

Of the Deaths above mentioned there were—

White Males,	203	
Ditto Females,	108	
Total Whites,		311
Black Males,	217	
Ditto Females,	236	
Total Blacks,		453
Total Deaths,		764

By order of the Board of Health,
JAMES A. MILLER, *Clerk.*

UNIVERSITY OF PENNSYLVANIA,

APRIL 6th, 1827.

At a Public Commencement, held this day, at the Musical Fund Hall, Locust street, the Degree of Doctor of Medicine was conferred upon the following gentlemen.

PENNSYLVANIA.	SUBJECT OF THESIS.
Benjamin I. Wiestling,	*Pneumonia Biliosa.*
Charles Fredrick Beck,	*Laryngitis.*
Charles H. Mathews,	*Trachitis.*
Allen Knight,	*Cholera Infantum.*
Edward Swain,	*Cholera Infantum.*
Fredrick A. Fickardt,	*Intermittent and Remittent Fevers of Bethlehem, during the years of* 1823-4-5 *&* '6.
Samuel A. Barton,	*Hydrocephalus Internus.*
Silas E. Potts,	*Bilious Fever.*
Watson P. Trego,	*Strictures of the Urethra.*
John P. Hiester,	*Indigestion.*
Charles Noble,	*On the Vacuity of the Arteries after Death.*
William Thomas M'Clurg,	*Pleuritis and Empyema.*
Mordecai Lawrence, Jr.	*Hepatitis.*
Morris Lancaster,	*Hydrocephalus Internus.*
Jacob S. Zorns,	*Influence of the Passions on the Human System.*
Abraham Rex,	*Pleuritis.*
Roger Davis,	*Mania à Potu.*
Thomas Jackson,	*Worms and Anthelmintic Medicines.*
Charles Merrick,	*Arthritis.*
John M. Bernhisel,	*Apoplexy.*
Thomas Forrest Ash,	*On the Use of Bloodletting as a preventive of Inflammation in wounded Joints.*
James Culbertson,	*On Diarrhœa.*
Charles Shoemaker,	*Intermittent Fever.*
Isaac Z. Coffman,	*Acute Hepatitis.*
Jenkin S. Evans,	*Hepatitis.*
Wilmon Whilldin, Jr.	*Croup.*
Lewis Rodman,	*Cholera Infantum.*

John F. Whitehill,	*Dysentery.*
Lewis Summerl,	*Rubeola.*
James Darrah,	*Dysentery.*
John R. Knox,	*Dyspepsia.*
Samuel A. Houston,	*Acute Rheumatism.*
Ephriam M. Blaine,	*Cynanche Trachealis.*

VIRGINIA.

George Thrift,	*Cholera Infantum.*
George Feild,	*Congestive form of Fever.*
John Edmunds Nicholson,	*Hydrocephalus Acutus.*
William Briggs,	*Bilious Fever.*
James Lewis Wydown,	*Dyspepsia.*
Joel Watkins,	*Hydrothorax.*
George Penn,	*Hæmoptysis.*
Robert H. Turnbull,	*Syphilis.*
Hobson O. Whitelaw,	*Hepatitis Acuta.*
Robert E. Peyton,	*The Art of Preserving Health.*
Phillip R. Triplett,	*Amenorrhœa.*
Joel Watkins Dupuy,	*Indigestion.*
Benjamin W. Maclin,	*Pneumonia Biliosa.*
William Powell Haynes,	*Medical Chemistry and its importance to the Physician.*
Theodorick Bland,	*Bilious Fever of Virginia.*
Nicholas L. Thomas,	*Phlegmasia Dolens.*
George Jefferson,	*Typhus Fever.*
Robert Harrison,	*Acute Hepatitis.*
Izard Bacon Rice,	*Caloric.*
William T. W. Taliaferro,	*Dysentery.*
Peyton Short Cocke,	*Puerperal Fever.*
Thomas P. Bagwell,	*Hypochondriasis.*
John P. Hardaway,	*Tetanus.*
William Lewis,	*On that species of Uterine Hæmorrhage called Accidental, occurring during Pregnancy.*
John I. O'Sullivan,	*Dyspepsia.*
Thomas C. Gordon,	*Gonorrhœa Virulenta.*
Samuel W. Vaughan,	*Croup.*
Joseph Mosby,	*Vital Principle.*
William F. Gaines,	*Asthma.*
Charles H. Boyd,	*On Influenza.*
Wilson J. Drish,	*Croup.*
Albert G. Smith,	*Phlegmasia Dolens.*
Samuel B. Richardson,	*Lithotomy.*
William C. Anderson,	*Phlegmasia Dolens.*
Zachariah Talley,	*Dysentery.*
William D. Baldwin,	*Bilious Colic.*
Cyrus M'Cormick,	*Bilious Fever as it occurred in the Valley of Virginia.*
Daniel Bedinger,	*Ergot.*
John Singleton Belt,	*Rheumatism.*
Thomas Johnson,	*Auscultation and Purcussion.*
Henry May,	*Pneumonia Biliosa.*
Robert Randolph Turner,	*Dysentery.*
Bernard Noller,	*Conjunctival Ophthalmia.*
John R. Taylor,	*Pneumonia Typhoides.*

MARYLAND.

Richard Henry Thomas,	*Mania à Potu.*
John Wood,	*Idiopathic Dyspepsia.*
Joseph Ford Shaw,	*Acute Rheumatism.*
Frederick Wessels,	*Tests for Arsenic.*

NEW JERSEY.

Albert Sargeant,	*Cynanche Trachealis.*
Joshua Whitall,	*Remittent Fever.*
John B. Zabreskie,	*Absorption.*
Benjamin H. Stratton,	*Puerperal Convulsions.*
Samuel Woolston,	*Treatment of Dysentery.*
William W. Day,	*Hernia.*

DELAWARE.

Robert Montgomery Bird,	*Phthisis Pulmonalis.*
E. Bivins Wootten,	*Poison from Opium.*
Peregrine Brown Battell,	*Podagra or Gout.*
William H. Bonwill,	*Fracture of the Os Femoris.*
Isaac Mitchell Price,	*Hæmoptysis.*
Alexander Lowber,	*Typhus Fever.*
Lewis Springer,	*Phthisis Pulmonalis.*

DISTRICT OF COLUMBIA.

Benjamin M. Brocchus,	*On the Vermifuge Powers of Cedar Apple.*
Sidney W. Smith,	*Hydrocephalus Acutus.*
James C. Hall,	*Physiology of the Brain and Nerves.*
Joseph Mechlin, Jr.	*Traumatic Tetanus.*
Thomas Gardiner,	*Remarks on Mercury.*

NORTH CAROLINA.

Josiah R. Horn,	*Pneumonia Biliosa.*
Henry M'Aden,	*Physiological Action of Narcotics.*
Robert Cannon Bond,	*Neuralgia.*
John Rhodes Herndon,	*Dysmenorrhœa.*
Samuel M. Southerland,	*Hæmorrhage.*
Isaac P. Freeman,	*Bilious Fever.*
James Henry Hicks,	*Scrofula.*
Fabius I. Haywood,	*Dyspepsia.*

SOUTH CAROLINA.

Joachim R. Saussy,	*Inflammatory Dropsy.*
James F. Griffin,	*Digestion.*
William E. Huger,	*Hæmorrhoids.*
Alfred B. C. Dubose,	*Non-Mercurial practice in Syphilis.*
Joseph C. Nott,	*Costiveness.*
John S. O'Hear,	*Hepatitis.*
Thomas F. Potter,	*Empyema.*
L. C. Trezevant,	*Properties of the Stillingia.*
Edward T. Lynah,	*Cancer.*
Mordecai C. Myers,	*Trachitis.*
Samuel Watt Bowie,	*Emansio Mensium.*

GEORGIA.

Richard T. Sanky,	*Debility.*
Henry I. Macon,	*Catarrhus Epidemicus.*
George N. Ware,	*Properties of Cold Water.*
Elijah Deupree,	*Functional Derangements of the Liver.*
James S. Sims,	*Debility.*
Amos Ward,	*Fever.*

ALABAMA.	
Edward B. Creagh,	*Pneumonia.*
Richard Lee Fearn,	*Experiments and Observations on Tendons.*
Pugh Houston,	*Hydrothorax.*
OHIO.	
John K. Finley,	*Influence of Atmospheric Air.*
Rockefeller Dakin,	*Vitality.*
TENNESSEE.	
William Bonner,	*Bilious Remittent Fever.*
VERMONT.	
George H. Parker,	*Scrofula.*

W. E. HORNER, *Dean.*

MEDICAL INTELLIGENCE OF GEORGIA.

A Medical Board was established in this state by the legislature preceding the present, for the purpose of examining those persons who wish to commence the practice of medicine, after the passage of the law, exempting those from an examination, however, who may graduate at any respectable medical school, but requiring them still to obtain a license from the board. The board hold their meetings annually, on the first Monday in December, at Milledgeville. Their first convention was held on the first Monday of the present month, (December,) when the following persons were elected officers of the board.

MILTON ANTONY, M. D. of Augusta, *President.*
BENJAMIN A. WHITE, M. D. of Milledgeville, *Secretary.*
ALEXANDER JONES, M. D. of Lexington, *Dean.*

The members of the board, besides the officers just named:—

Dr. T. FORT, Dr. GRAHAM, of Salem, Clarke County.
Dr. O. C. FORT, of Twiggs.
Dr. DANIEL, Dr. SCREVEN, of Savannah.
Dr. DENT, Dr. WATKINS, of Augusta.
Dr. RICHARDSON, of Elbert.
Dr. WEEMS, of Washington.
Dr. WEST, of Darien.
Dr. BABER, of Macon.
Dr. HAMILTON, of Clinton.
Dr. GERDINE, of Clarke County.
Dr. HARLOW, of Waynesboro'.
Dr. GORMAN, of Forsyth.
Dr. POWELL, of Monticello.

Making in all twenty members: seven forms a quorum. During our late meeting thirteen members attended.

The board adopted a rigid examination as the surest means of elevating the profession in the state, and doing justice to the applicants and the community; thirteen received license to practice physic, of those examined, besides a number of graduates. The following extracts from the *by-laws* adopted by the board, will illustrate the policy intended to be pursued in future.

"1. Applicants for examination shall be required to write and present a thesis on some medical subject, and hand the same to the dean, on or before each annual meeting of the board."

"2. The board of physicians will require of each candidate a competent knowledge of chemistry, materia medica, anatomy, physiology, surgery, midwifery, and the theory and practice of medicine, and will not grant a license to any candidate materially deficient in any of those branches.

"3. In future, applicants having diplomas, shall be expected to send them to the board of physicians for examination, and that in no case shall a temporary or permanent license be granted, upon the testimony of a member of this board, or any individual without the diploma.

"4. A re-examination will be granted by the board to rejected applicants, on the *sole condition* that the second examination be held publicly, and the questions and answers recorded on the minutes."

The order of examination will be so conducted as to commence with the first name on the list, and proceed numerically, until the list is gone through, and if any applicant is absent when his presence is required by the board, the next shall be presented in his place, and the name of the absentee placed at the bottom of the list. Letters addressed to the dean, in Lexington, Georgia, post paid, requesting their names enrolled, with residence and title of thesis, will be duly attended to.

At the close of the session of the board of physicians, a Central Medical Society of Georgia was formed, and the following by-laws were adopted, with other proceedings thereupon.

By-Laws of the Central Medical Society of Georgia.

Art. I. The objects of the Society shall be the cultivation of medical science, and its collateral branches.

Art. II. The Society shall be composed of the members of the board of physicians, and such others as may be from time to time admitted, not exceeding forty in all.

Art. III. The officers of the Society shall be a President, two Vice Presidents, a Secretary, and Treasurer.

Art. IV. The regular meetings of the Society shall be held annually at the seat of government, immediately on the close of the annual session of the board of physicians.

Art. V. Physicians distinguished for their zeal and acquirements in the profession, may be elected to honorary membership.

On motion, Dr. MILTON ANTONY, M. D. of Augusta, was appointed Chairman, *pro tem.* and ALEXANDER JONES, M. D. of Lexington, Geo. Secretary, *pro tem.*

On motion, it was *Resolved,* That the Society proceed to elect ten permanent members, in addition to the members of the board of physicians now composing the Society.

Whereupon the following gentlemen were proposed and elected, viz.:

Dr. H. HULL, of Athens, Geo.
Dr. R. BANKS, of Elbert County, Geo.
Dr. WILLIAM R. WEARING, of Chatham County, Geo.
Dr. BOYKIN, of Baldwin County, Geo.
Dr. FOSTER, of Green County, Geo.
Dr. WILLIAM A. BROWN, of Monroe County, Geo.
Dr. LAW, of Monroe County, Geo.
Dr. D. A. REESE, of Jasper County, Geo.
Dr. WALKER, of Morgan County, Geo.
Dr. BRANHAM, of Putnam County, Geo.

On motion, *Resolved,* That the secretary address a letter to each of the above gentlemen, stating to them the objects of the Society, and request their co-operation, and solicit an answer, stating whether they will accept the appointment.

The society was adjourned until meeting in course.

The above proceedings are only intended as the embryo of the society. It is intended to admit those young men who apply to the board for licenses, and receive them, as junior members of the same, and on further evidence of medical reputation, either by graduation, or some years of successful practice in the profession, to admit them to honorary membership. It is proposed to be on the footing of the general state Medical Society, &c.

Medical Journals and Newspapers throughout the Union, will confer a favour by publishing the above, and oblige a

CORRESPONDENT.

MEDICAL INSTITUTE OF PHILADELPHIA.

The Summer Course of Lectures will begin on Monday, the 9th day of April, and end on the Saturday preceding the first Monday in November. The Month of August is a vacation.

NATHANIEL CHAPMAN, M. D. on the Practice of Medicine.

WILLIAM P. DEWEES, M. D. on Midwifery.

THOMAS HARRIS, M. D. Surgeon United States' Navy, on Operative Surgery.

SAMUEL JACKSON, M. D. on Materia Medica.

WILLIAM E. HORNER, M. D. on Anatomy.

JOHN K. MITCHELL, M. D. on Chemistry.

JOHN BELL, M. D. on the Institution of Medicine, and Medical Jurisprudence.

HUGH L. HODGE, M. D. on the Principles of Surgery.

QUARTERLY LIST

OF

AMERICAN MEDICAL PUBLICATIONS.

The American Dispensatory, containing the Natural, Chemical, Pharmaceutical, and Medical History of the different substances employed in Medicine, together with the Operations of Pharmacy; illustrated and explained, according to the principles of Modern Chemistry; to which are added, Toxicological and other Tables; the Prescriptions for Patent Medicines, and various miscellaneous preparations. Seventh edition, improved and enlarged. By John Redman Coxe, M. D. Professor of Materia Medica and Pharmacy in the University of Pennsylvania, &c. &c. &c. Philadelphia, 1827, pp. 780.

The fact of this work having reached a seventh edition, is sufficiently indicative of its value; it is, indeed, an indispensable book in the library of every American practitioner. This edition, besides several other improvements and additions, contains a series of interesting observations and experiments on the subject of cinchona, sulphate of cornine, extract of cornus florida, rhubarb, &c., by Mr. George W. Carpenter.

Lessons in Practical Anatomy for the use of Dissectors. By W. E. Horner, M. D. Adjunct Professor of Anatomy in the University of Pennsylvania, one of the Surgeons of the Philadelphia Alms-house, &c. Second edition. Philadelphia, 1827, pp. 500.

The Philosophy of the Human Voice: embracing its Physiological History; together with a System of Principles by which Criticism in the Art of Elocution may be rendered intelligible and instructive, definite and comprehensive. To which is added a Brief Analysis of Song and Recitative. By James Rush, M. D. Philadelphia, 1827, pp. 586.

A Manuel of Chemistry, on the Basis of Professor Brande's: compiled from the works of Brande, Henry, Berzelius, Thomson, and others. Designed as a Text Book for the use of students and persons attending lectures on chemistry. By J. W. Webster, M. D. Lecturer on Chemistry in Harvard University. Boston, 1826, 8vo. pp. 603.

A Practical Treatise on Poisons and Asphyxias, adapted to General Use, followed by the Directions for the Treatment of Burns, and for the Distinction of Real from Apparent Death. By M. P. Orfila. Translated from the French, with Notes and Additions, by J. G. Stevenson, M. D. with an Appendix. Boston. Hilliard, Gray, Little and Wilkins, pp. 240. 12mo.

An Oration delivered before the Philadelphia Medical Society, pursuant to appointment. By R. La Loche, M. D. Honorary Member of the Society, Member of the American Philosophical Society, &c. Published by the Society. Philadelphia, pp. 31.

The subject of this Oration, is the application of physiology to the science of disease; and its author has in an able and we think satisfactory manner proven its importance. In his concluding remarks, Dr. La Roche notices the advantages that would result from a more extensive course of instruction than is afforded in our medical schools.

Introductory Lecture to the Course of Anatomy and Physiology, in Rutgers Medical College, New York, delivered November 11, 1826. By JOHN D. GODMAN, M. D. Professor of Anatomy and Physiology. Second edition. New York, 1827, pp. 44.

The North American Medical and Surgical Journal for April.

The American Medical Recorder for April.

The Quebec Medical Journal for January.

The New England Medical Review and Journal.

The New York Medical and Physical Journal.

The Boston Medical Intelligencer.

Observations on the Transplantation of Teeth, which tend to show the impossibility of the success of that operation. Supported by a New Theory. By JAMES GARDETTE, Dentist.

PROPOSED AMERICAN PUBLICATION.

Wells & Lilly, of Boston, propose to publish, by subscription,

A Series of Engravings, illustrative of the different Stages of the Small Pox and Varioloid Diseases; to which will be added, an Engraving, representing the Vaccine and Chicken Pox Eruptions during their course. By J. D. FISHER, M. D.

THE

Philadelphia Journal

OF THE

MEDICAL AND PHYSICAL

SCIENCES.

ART. I. *Observations on the Black Vomit.* By S. HENRY DICKSON, M. D. Professor of the Institutes and Practice of Medicine in the Medical College of South Carolina.

AMONG the vast number of the concomitants or consequences of disease, no single symptom, perhaps, is regarded with such terror as the black vomit, so well known to the inhabitants of our southern American regions, and to the medical profession every where.

The dark coloured fluid ejected from the stomach presents sometimes the appearance of thinly scattered black flakes swimming in a limpid or straw-coloured watery mucus; at others, the containing menstruum is of a deep brown hue, with innumerable black points or specks diffused through it—well described as resembling a mixture of soot and water. In the first instance the colouring matter seems collected into larger masses, and entangled in mucus; in the latter it is divided very minutely, and very equally mixed, but on being allowed to remain undisturbed, will settle to the bottom of the brownish thinner fluid with which it has been united; occasionally, but rarely, it is of the bluish black which forms the hue of ink.

It is one of the most ordinary attendants upon the progress of yellow fever, of which it has hence almost come to be considered as an essential and characteristic symptom. Indeed, some physicians seem disposed to doubt the propriety of applying the title to any case or cases, unless the occurrence of black vomit be proved to have taken place; while others would do away, by giving an undue importance to a single circumstance, all the distinctions between the several types of fever in warm climates; thus confounding together bilious remittent and intermittent, with yellow fever, which is a fever of a single paroxysm,* knowing neither intermission nor remission, a mistake committed by RUSH upon his equally unfounded, but more philosophical views of the unity of disease. It is easily shown, however, that both these positions are untenable. By a brief reference to the great number and variety of forms of disease in which it is exhibited, we shall make out clearly its entire independence of, and want of necessary connection with, any particular morbid condition of the general system.

It is met with in every diversified state and circumstance of yellow fever. I have seen it occur as early as the second day of the attack. It is sometimes not ejected at all, but found in large quantities in the stomach and intestines on examination after death. I need hardly mention that in some distinct and exquisite cases it is not observed at all. It sometimes appears unequivocally, and is suspended for a shorter or longer period, perhaps three or four days, as I have myself seen matters thrown up in the interval, presenting none of this peculiar discoloration. It is well known to give just and melancholy occassion for the most unfavourable prognosis, yet it happens in curable as well as hopeless cases.

Though usually attended with great bodily prostration, and intense mental depression, yet it is now and then connected with circumstances strinkingly contrasted. I saw a patient in our Marine Hospital, in 1817, walking from ward to ward with a vessel under his arm to receive the black vomit which he threw up from time to time. He continued this practice for two days, and until within fifteen minutes of his death, which took place suddenly, and altogether unexpectedly to the poor fellow; he had always expressed the most cheerful and confident anticipations of recovery, notwithstanding this usually much dreaded symptom.

Nor is it only in yellow fever that the stomach takes on the disposition to eject matter of the hue and appearance above described. The black vomit has been noted as showing itself in a thousand varied states of the system, some of them scarcely to be termed diseased. One of our oldest and most respectable practitioners informs me that he has more than once met with it in the easy vomitings of pregnant women. The same gentleman has detailed to me a still more singular instance of its occurrence in a healthy boy, without any previous or coincident bad symptom, and occasioned by no evident cause beyond mere *fatigue*, the youth having run about and played much on a summer day. He slept after vomiting, and awoke quite well.

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* It has been not unaptly styled a gastro-duodenitis.

On the 17th November, 1825, I was desired to visit in haste, Mrs. J. F. a lady in the eighth month of *pregnancy*. I found her sitting supported in bed, throwing up the black vomit. There was violent head-ache—severe pain in the eyes, which were intolerant of light—no pain at the epigastrium; a slight purgative was ordered, and she was next day as well as usual.

The same fluid was ejected from the stomach of a patient of mine, a child of three years and a half old, on the 22nd March, 1826, during an attack of *catarrhal fever*, which was then epidemic among us. He recovered readily. It was poured forth in abundance in the case of an aged and venerable statesman, who died here in 1824, of *dropsy*.

I attended in consultation with Dr. T. G. PRIOLEAU in the winter of 1824–25, a member of the class of that year, who was attacked with varioloid, or small-pox modified by previous vaccination. During the eruptive fever, which was very violent, and marked with all the tokens of extreme gastric disorder, this patient ejected the black vomit freely. It ceased on the coming out of the eruption, and he recovered.

In March, 1825, I lost a patient and a friend with *enteritis*, who before his death, threw from his stomach and passed by stool, this black fluid in considerable quantity.

On the 13th November, 1825, I was called to see a negro fellow labouring under some obscure *abdominal affection*. With severe pain along the whole course of the spine, from neck to sacrum, there was obstinate constipation, great irritability of stomach and prostration of vital powers. He died the next evening, after ejecting the black vomit. I had no opportunity for making examination of the body.

In September, 1825, I saw two patients die of bilious remittent fever upon Charleston Neck, with black vomit and stools of the same fluid. In each of these the symptoms appeared on the fourth day. They lived at some distance from the city, on a low wet spot of ground, and were peculiarly exposed to the ordinary causes of autumnal remittent and intermittent. COVENTRY, COOKE, and others, mention the black vomit as an occasional symptom in the severer cases of autumnal fever, in the several regions of miasmatic country in which they practised. Lastly, it has been seen almost regularly by those practitioners of midwifery, who have been so unfortunate as to meet with cases of rupture of the uterus.

What is it that occasions the peculiar hue of the matter vomited under the circumstances detailed?

To those who have referred us to the occurrence of gangrene and sphacelation of portions of the internal lining membrane of the stomach, and their separation and minute diffusion through its contents, it is altogether satisfactory to reply, that proofs of this state of the organ are for the most part entirely wanting. It is out of the question to imagine such a condition of things in many of the instances above stated. Farther than this, I will affirm, that even in yellow fever, in which this symptom is of more regular and frequent appearance, than in any other, or all other forms of disease; in the yellow fever of our climate, it is very rare to meet with a gangrenous state of the stomach. In the examinations which I have had an opportunity of making, (and they have not been few,) I have never seen a single spot of sphacelus, although the tokens of inflammation are constant and unequivocal. I have fifty times collected the black fluid from stomachs as firm and sound as possible. Is it, or is it not, a mixture of dark blood acted upon, and closely combined with the gastric fluids? I am disposed to think it is not, because in the vast majority of instances, it is impossible to detect any of the reddish tint which blood, however altered, essentially possesses and retains. This tint it communicates in *all* cases of hematemesis proper to the contents of the stomach so as to be unequivocally perceptible. In many patients in the last stages of yellow fever, and occasionally of bilious fever, this hæmorrhage occurs. It is then easy to discover the mixture of blood with black vomit or other matters ejected. A bit of white paper or rag dipped in any such mixture, in which the smallest proportion of blood is diffused, will not fail to show plainly enough the reddish hue.

Some have believed it, with still less reason, to consist of a vitiated hepatic secretion. This opinion is untenable, for the colouring matter may be, and often is, seen in the vessels of the stomach itself, from the mouths of which it may be pressed without difficulty by the finger. A fluid of a deep dark colour may, it is true, be not unfrequently found distending the gall-bladder. It is, however, different in so many particulars from the fluid of which I have been speaking, that no one who has attentively examined them, will I think remain in any degree inclined to confound them.

The black vomit has been already described particularly. The bile just now alluded to is shining and glossy like tar and molasses; is homogeneous; when diluted with or dissolved in water, always offering a shading of green or yellow, by which it may be known. It is always bitter also. The matter of black vomit is, for the most part, nearly or altogether insipid.

I am led therefore to conclude that the matter of black vomit consists of a peculiar secretion from the vessels of the stomach. It further appears that these vessels take on the disposition to pour out this secretion, under the influence of a variety of circumstances, the direct energy of whose morbid agency we can neither explain nor control.

ART. II. *Observations on the Pathology and Treatment of Epilepsy, with cases.* By SAMUEL JACKSON, M. D.

IF direct deductions from the symptoms, which are but derangements of function, will lead us to a knowledge of the organ affected in any disease, and the nature of the organic lesion, we must conclude that the brain is, indubitably, the seat of epilepsy, and sanguine congestion suddenly and periodically induced the character of the morbid lesion. The fact is demonstrated, 1st. By the symptoms of epilepsy being produced by irritating directly the brain, and by mechanical compression exercised on it. 2d. By dissection after death, which, with scarcely an exception, exhibits more or less of a morbid condition of the brain or its meninges.

The brain is a compound organ, or rather an aggregation of organs, each having a particular office or function to fulfil. In no disease, probably, are they all simultaneously affected, and could not be, in fact, to an extent interfering with all their functions, without immediate death. According to the number of the encephalic organs in a state of lesion, and the intensity of the irritation of which they are the seat, and of consequence, the extent of functional derangement, will be the character of the symptoms and nature of the disease.

In epilepsy the sensorial and motorial faculties are, in most instances, implicated, and the paroxysm is attended with suspension of intelligence and the senses, and convulsions in the muscular system. The difference between hysteria and epilepsy, consists in the less degree of the affection of the sensorial functions in the last. It is very rare that the intellectual faculties are entirely obscured in hysteria. Consciousness almost uniformly persists, and the patient, although incapable of giving utterance to the expressions, after the paroxysm has passed, can describe the sensations that were experienced, and relate circumstances that occurred. In some instances hysteria is of so violent a character, that it can with difficulty be discriminated from epilepsy. The paroxysms are, however, more irregular than those of epilepsy, are excited by slight and mostly obvious causes, and can generally be mitigated or even terminated by an appropriate treatment. Cases of this kind mistaken for epilepsy, have given reputation to some article of the materia medica, accidentally hit upon in the purely tentative practice usually resorted to for its treatment, but which has seldom succeeded on a second trial.

Apoplexy consists of a higher degree of irritation, and generally involves more of the cerebral organs, than epilepsy. The sensorial and motorial organs, those that maintain respiration, and occasionally the whole of the apparatus of innervation are involved, and death is the inevitable result. The motorial organs in epilepsy, have their functions disturbed by the excess of irritation—the nervous power, or stimulus, or function, in whatever it consists, is redundant, is discharged in too large quantity into the muscular system, and which is convulsed, precisely as are the muscles under the influence of galvanic stimulation. In apoplexy, on the contrary, the intensity of the irritation, and extent of the consequent congestion, often terminating in effusion of blood, suspend entirely the functions of the encephalic organs affected. When the sensorial are its seat, there is stupor, coma—when the motorial, paralysis—when the respiratory, death.

The different nervous diseases, those affecting the encephalic organs, have a most intimate alliance with each other, notwithstanding the diversity of their symptoms, and this connexion explains the frequency with which they pass into one another. GEORGET has many years since presented this view of the nervous diseases; it was also entertained by Dr. PAREY, and it has been most admirably sustained by Dr. THOMAS MILLS, in the last year.

The brain or its meninges, in the epileptic is, in general, in a state of erythism or chronic irritation, whence it is morbidly irritable, and impressible by very slight causes, whose actions on the system are transmitted to the brain.

This condition of the brain, constitutes the predisposition to the epileptic paroxysm, and is often produced and maintained by the cause that occasions the paroxysm itself; sometimes is independent of it.

The causes that give rise to epilepsy are various; they are all to be resolved into irritation, directly or indirectly excited in the brain. The direct causes are exostosis, splinters and depression of the cranial bones, tumors, &c. in the brain, limited abnormal transformations of structure, &c. The indirect are chronic irritations of some of the abdominal viscera, periodically increased, local irritations from wounds, cicatrices, and foreign substances in different parts of the body, excitement of the genital organs by excessive venery, and, especially, masturbation, excitement of the brain, by the passions and mental labours, &c. It results also from febrile diseases, in which the brain has been violently affected.

From this pathological view of epilepsy, the treatment should be directed, first, to relieve the congestion resulting from the sudden raptus of blood to the brain, which constitutes the paroxysm, and second, to prevent its recurrence.

The first is to be accomplished, *a*, by general blood-letting, which is most serviceable in the early periods of the disease.

The blood is to be taken in preference from the foot; and next to the foot, from the temporal artery. Blood-letting is not to be indiscriminately employed in every case. It is most decidedly beneficial in the plethoric; in the highly nervous temperament it is often injurious. *b*, By revulsion, accomplished by warm sinapised or saline pediluvia; sinapisms to the extremities, and irritating injections into the rectum. *c*, By the direct sedative action of cold applied to the head.

The second object of the treatment is to overcome the erythismatic condition of the brain, the cause of its morbid irritableness, and to remove the remote irritations that reproduce or tend to maintain this state, and awaken the raptus, the immediate cause of the sanguine congestion. When the irritating cause depends on abnormal conditions of the bones of the cranium, meningeal or cerebral structure, little can be accomplished by any plan of treatment that can be adopted. Depression of the bones may be removed by the trephine, and has proved successful.

The erythism of the brain may be diminished; *a*, by an appropriate regimen. When the digestive apparatus is in a healthy state, the antiphlogistic treatment is not to be pushed to a great extent; the diet should then be plain in quality, moderate in quantity, succulent, and easily digestible; coffee, spirits, smoking, and whatever excites the brain or nervous system, condiments, &c. to be prohibited; it will be sufficient to avoid a tendency to excess in any respect. *b*, By repeated moderate local depletion, either by cups or leeches, as three or four leeches applied every day or every other day to the temples or behind the ears; or cups once or twice a week. *c*, By reducing the circulation and temperature of the head, by the sedative action of cold. This end is attained by cutting the hair close, or shaving the scalp; wearing a straw, or other light hat, and by the frequent application of cool water, say the temperature of 45° to 50° F. during the day. It may be applied by the means of a wet cloth, or sponge, or water cap worn for half an hour, at a time, during the day. *d*, By exciting the skin, which is to be effected by frictions, with a flesh brush, once or twice a day, massage, tepid baths, and wearing socks or stockings powdered with mustard, &c. *e*, By revulsive irritations, which may be created, first, on the exterior surface, always the safest; by pediluvia daily repeated once or twice; by rubefacient plasters on legs, thighs, arms, &c. the effect to be limited to slight redness without pain; issues in arms or legs: second; on internal surfaces of stomach, small intestines, and rectum. The last locations for revulsive irritation are those generally selected. In fact, the empirical treatment of epilepsy, so much in vogue, consists almost exclusively in exciting gastric and intestinal irritation, by a variety of irritating agents. Unless this mode of managing epilepsy be conducted with caution and prudence, it may confirm the evil, not remedy it; and occasion other lesions, nearly as sinister as that it is intended to repair. All irritations sufficiently intense to be transmitted to the brain, whether artificially awakened by our remedial agents, or by morbid causes, may occasion the accession of epilepsy in those who possess a predisposition to it. Irremediable inflammations of the stomach and bowels, may also result from the prolonged or ill-timed exhibition of active irritants. *f*, The avoidance of direct excitation of the brain; intense mental application, any pursuit that requires much exertion of thought, excitement of the passions, more especially that of the venereal orgasm, must be positively abstained from.

The exciting causes of the epileptic accession, when existing in other organs, than the brain, must be attacked and dissipated by the means adapted to each. Chronic irritation of the digestive apparatus and intestines, must be met by the antiphlogistic diet, local depletion from epigastrium and anus; by frictions to the abdomen; sometimes by mild tonics, &c. Irritations of the uterus in females are among the most frequent of the remote and exciting causes of epilepsy, and the most difficult to oppose, from the inaccessible position that organ occupies. They may be attempted, however, by local depletion from pubic region, over the sacrum, from the groins, from the vulva, and uterus itself; by tepid hip baths and emolient injections. Local irritations maintained by foreign bodies, as pieces of glass, &c. can only be relieved by their removal.

The preceding is a very general outline of the rational treatment of epilepsy, based on its pathology, and the direct indications to be accomplished.

The following case was treated on this plan.

John Beagle, a lad aged 14 years, was brought into the Alms-House, August 23, 1826. He had epileptic convulsions daily, and sometimes two and three a day—occasional intervals of a week without recurrence of paroxysms—had been in this state two years—complexion coloured and good—complained of constant head-ache—tongue moist and white—bowels constipated. He was ordered a diet of oatmeal gruel, and soup—head to be shaved—to be cupped on the head twice a week—to wear a water cap, with cold water, every two hours during the day; to have warm pediluvia with ashes every night, and frictions to the skin. The convulsions ceased to recur after the first week; he had but one subsequently, which was brought on by sitting up with a patient all night. He continued to act as an assistant in the ward, pursuing the treatment laid down, until the 29th of September, when the managers, to my regret, removed him for non-residence.

The following case exhibits a modification of epilepsy, affecting the sensorial faculties, and not the motorial, and which was relieved by the same treatment.

Mr. M———, of North Carolina, aged twenty-five years, small stature, dark hair, received an injury on the head by a fall from a horse when a lad, of which the scar remained. He experienced no subsequent inconvenience that could be fairly attributable to the accident. For the last three or four years, indulged, though not to an extreme, in dissipation; and a short time previous to his present disease, was exposed for some months, by associating with a young female who permitted certain liberties, to constant erotic excitement without an indulgence of the passion.

In the fall of 1824, he came on to Philadelphia, and on the journey the first manifestations of the symptoms of the disease made their appearance. During the winter of 1824–5, he lived rather freely, with an increase of the affection, and for which he took advice. He was placed on a regimen, and purgatives were administered. He returned home in the spring, the disease increasing on him. In the fall of 1825, he again returned to Philadelphia without any abatement of the complaint, and was under treatment the whole of the winter, spring, and commencement of summer. A rigid abstinence, purgatives, sage and mustard, nitrate of silver, and other remedies were successively resorted to, but without any marked benefit. During this period he was prosecuting professional studies. He first applied to me, August 16, 1826. The affection was periodical, returning the commencement of every month, and continuing for a week or ten days. The accessions occurred from two to five or six times a day—various exciting causes would induce them. Sometimes they were excited by unusual corporeal, or mental exertions, or any causes awakening unusual excitement.

In the form of the disease with which he was affected, the sensorial faculties alone were implicated; the motorial remained in a natural condition. The accession would come on suddenly, without previous warning, often in the midst of conversation, and would continue from five to ten minutes, when it would go off without the slightest consciousness of what had occurred. He usually commenced with the utterance of inarticulate sounds, humming, then singing, speaking in unconnected language, which towards the close became more rational—occasionally he applied abusive epithets to those with whom he was in conversation when surprised by an attack—the eye during the access had a fixed stare, with a vacant expression. He complained of frequent headache, constant dimness, flushes in the face from slight causes, and exercise occasioned violent throbbing of the carotids. From the symptoms I concluded the anterior hemispheres, the sensorial organs, were the subjects of a permanent irritation, which only required to be extended to medulla oblongata and its annexments, to produce convulsions with each accession, and a true epileptic paroxysm.

Taking this view of the pathology of his case, I directed him to have his hair cut close, to wear a fold of cloth wetted with spring water on the top of his head with alternations of two hours, to use pediluvia every night, with frictions, to have four leeches applied daily to the temples, to abandon his studies, avoiding all serious avocations, to exercise moderately, bare headed, early in the morning and evening, to improve the quality of his diet, but to limit each meal to twelve or fourteen ounces, for fluids and solids, and to maintain a soluble state of his bowels by laxative diet and injections, and in the commencement of September to take aloetic pills. He was also requested to retire into the country, that he might avoid the numerous sources of excitement of a city life.

September 16th. Visited me from the country; has adhered rigidly to plan laid down; has escaped for first time the monthly attack which was expected on the fifth or sixth; no longer troubled with dizziness; head feels clearer; exercise does not produce throbbing of the carotids and palpitation of heart; addition to his diet of from two to four ounces.

September 19th. Came into the city yesterday—walked early this morning two miles, and attended a chase of a bag fox—returned, eat hearty breakfast, and attended three lectures—was so much fatigued he could scarcely walk home. The consequence of this imprudence was a single paroxysm, which lasted ten minutes, and for the first time with slight convulsive movements. I saw him at the close of the accession—he did not recognise my person, but immediately knew my name. In like manner, he did not recall any one of his friends who were with him from their persons, though he instantly knew their names. He was now enjoined to retire into the country, and pursue rigidly the plan that had been marked out for him, and not suppose he was cured from missing a single paroxysm.

September 29th. Made a visit from the country—has had a slight paroxysm, from reading six newspapers in succession—feels better—adheres to treatment—bowels regular—the leeches take about ℥ss. blood daily.

October 19th. Has had no return—complexion has improved, strength invigorated, can walk four miles without fatigue; flushing of face, vertigo, and throbbing, that formerly attended exercise, have disappeared. He applies the cold every hour during the day, and continues the leeches—appetite good—digestion perfect, bowels regular.

November 10th. Has escaped a renewal of the paroxysm. He has determined to relinquish his studies and return home, which I have advised, and have urged him to persevere for six or eight months, as nearly as possible, in the same plan of treatment.

In this case evident benefit was derived from the treatment, and when compared with the little accomplished by the former practice, and the short period in which it had been instituted, there is good cause to believe, a perseverance in it will effect a permanent cure.

ART. III. *On the Pathology and Treatment of Iritis.* By ISAAC HAYS, M. D. one of the Surgeons of the Pennsylvania Infirmary for diseases of the Eye and Ear.

INFLAMMATION of the eye, with its consequences, offers a wide and interesting field for observation. "Every one," says WENZEL, "flatters himself with being acquainted with it; the lowest man in the profession knows how to speak of rose water and sugar of lead; but it is granted only to a few to have a clear insight into this branch of ophthalmic disease." Anxious to attract the attention of the profession to a class of affections, which exercise an extensive influence on human comfort and happiness, and which yield in importance to none, except those only involving organs essential to life itself, we offered, in the preceding numbers of this Journal, some remarks on inflammation of the conjunctiva and sclerotica, and we propose, on this occasion, to present a few observations on the pathology and treatment of inflammation of the iris. Frequent in its occurrence, singular in its symptoms, and productive of extreme injury to the structure and functions of the eye, this disease, nevertheless, appears never to have attracted attention, or to have been described until a very recent period. The investigations, however, of late writers, particularly those of SAUNDERS, TRAVERS, BEER, &c. have shed a flood of light on this complaint; in fact, in relation to some points of the treatment, they have left nothing to be desired; but in respect to others, and especially in regard to the structure and organic properties of the tissue of which the iris is composed, the analogies according to which morbific causes operate upon it, or the pathological effects which its structure would show peculiarly to result from its inflammation, little if any thing appears to have been determined.

It is not our intention at present, to enter into a minute detail of the structure and functions of the iris; this would lead us too far from our subject, involving, as it would, the consideration of most of the internal tissues of the eye, our investigations respecting which we shall take a future opportunity of laying before our readers. We shall now consider the structure of the iris, only so far as is necessary to enable us to understand the pathological character of its structure.

Most anatomists have considered the iris as a muscular tissue: RUYSH, HEISTER, WINSLOW, ZINN, LIEUTAUD, SABATIER, &c. believed that it was composed of two sets of fibres, one radiating, the other circular; others, however, at the head of whom was the celebrated MERY, denied the existence of any other except radiating muscles, whilst a third set, among whom was ALEXANDER MONRO, DEMOURS, and MECKEL, admitted only of the occurrence of circular ones. MORGAGNI, however, declares, that he never could, even with the aid of a lens, distinguish muscular fibres, a conclusion in which he was supported by DUVERNOIS, WEITBRECHT, FERREIN, HALLER, and even ZINN, who, though he thought that the iris ought to be referred to muscular tissues by its actions and properties, admits that he never could distinguish muscular fibres, even by the microscope. The posterior radiating striæ which MAUNOIR and others supposed to be muscular, Mr. JACOBS has shown by the strongest proof, namely, by injecting them, to be vessels. Persuaded, however, that the motions of the iris were dependent on muscular action, he is induced to believe a peculiar structure which he has noticed on the anterior surface of the iris to be muscular. But he has not afforded any proofs of the correctness of this opinion, and we are convinced that had not he been biassed by his preconceived notions, he never would have suspected the structure he has described to be muscular. The parts are so minute that it is impossible to speak with great confidence of their nature, but we have little hesitation in believing it to be composed of vessels, perhaps glands, and the cords which Mr. Jacobs considers as tendons, if not vessels, are probably excretory ducts or absorbents. But it may be asked, if there be no muscular structure in the iris, how are its motions effected? Haller was perhaps the first who had any idea of the true cause; he ascribed the dilatation and contraction of the pupil to the greater or less impetuous afflux of blood to the colourless vessels of the iris, but it was reserved for modern physiologists to explain fully the mode by which its motions are effected.

It was observed by Messrs. DUPUYTREN and RULLIER, that there existed in the animal œconomy certain structures, which could not be referred to any of the tissues into which BICHAT had divided the organic solids. These structures possessed the remarkable property of attracting to themselves an unusual quantity of blood, with which they become engorged, their size increased, their vessels straightened, and suffer erection. This effect may be produced by irritation of the parts and by affections of the mind. It is thus, the penis is erected; the cavernous bodies, the glans penis, the spongy portion of the urethra, becoming turgescent and dilatated. The same phenomena may be observed in the nipples when titillated, &c. &c.

The cavernous body of the penis may be considered as the type of this tissue, and the labours of MORESCHI has thrown considerable light upon its structure, but yet, many further researches will be necessary for the full elucidation of the minute organization of the tissue. It may, however, be said to consist of an accumulation of arteries, veins, and many nervous filaments, intimately interlaced, forming a kind of spongy structure, the cells of which communicate. To the tissue under consideration may be referred the clitoris, the internal surface of the vagina, the nipples, &c. and we have no hesitation in referring to it also the iris.

All authors who have investigated the structure of this part, agree in representing it as a very vascular membrane, and that its principal structure consists of numerous arteries and veins, and a copious supply of minute nerves, all which are connected together by a delicate filamentous tissue. The vessels are exceedingly tortuous, and are accurately delineated in the splendid plates of MASCAGNI, also by ZINN, &c. &c. The arteries are derived from the long and anterior ciliaries, and the nerves from the small branches of the ciliary order. These, with the connecting filamentous structure, form the parenchyma of the iris. The internal lamina of the choroid is continued over its posterior surface, and the whole is covered by a very delicate serous membrane, which is continuous with that lining the internal surface of the cornea, and anterior surface of the capsule of the lens.

The pathological changes which take place in the iris, when inflamed, will of course vary in the different tissues of which it is composed. The serous membrane which covers it, like the other serous membranes, when inflamed, throws out coagulable lymph, which sometimes accumulates around the edge of the pupil, and forms the condyloma of Beer. The changes produced in the erectile tissues, have not as yet been very fully investigated; but it is ascertained, that lymph is also secreted in its substance, by which its parts become adherent; pus is at other times secreted, and abscesses formed. We shall, however, notice these changes more particularly when considering the symptoms and progress of iritis.

Much difference of opinion exists respecting the causes which excite inflammation of the iris. It may be produced by extension of protracted inflammation of the conjunctiva or sclerotica, by surgical or accidental wounds and by the action of cold: this is admitted by every one. But there are few parts, the diseases of which are more frequently connected with the morbid states of other organs, or with general constitutional derangement than the eyes, and our knowledge of their affections would be very defective and imperfect, if we were to confine our attention to them, as if they were merely of a local nature, having no sympathy or connection with the general system. Hence we must not limit our view of the disease under consideration, to it as it exists in a healthy state of the body, but notice attentively its progress and symptoms as modified by certain deranged states of the system.

The following affections have been said by writers to *excite* iritic inflammation, namely, syphilis, rheumatism, gout and the state of the system produced by the action of mercury. After collecting all the evidence to which we could obtain access, and carefully comparing it with the results of our own experience; we have been irresistibly led to the conviction that these diseases do not act as *exciting* causes of the complaint under consideration. That, however, they are frequent predisposing causes of this disease, we are not disposed to deny.

It is, however, asserted by some surgeons, that syphilis alone never pre-disposes to iritis, but that this affection is produced by the mercury given to cure the former disease. That persons affected constitutionally with the venereal poison, are, under certain circumstances particularly liable to internal inflammation of the eye, we have very strong evidence. It is true that we do not very frequently meet with patients who have passed through all the stages of syphilis, and who have not taken mercury in some form or other; hence it is difficult to say to which of these poisons the secondary symptoms are ascribable; but we do occasionally meet with such cases, and it is well known that females who are affected by their husbands, rarely use mercury till the disease appears in a constitutional form, and they are frequent subjects of this species of ophthalmia. It is also stated by Mr. Hewson to be common among the lower orders of Irish peasantry, who, when disordered are notoriously negligent in resorting to any treatment until some of the secondary forms appear.

Mr. Hewson doubts the possibility of mercury producing a predisposition to iritic inflammation; on the contrary, he is of opinion, that its constitutional operation rather diminishes than increases the susceptibility to the disease. He asserts that the ophthalmic symptoms usually associated with the constitutional use of mercury, are of a very distinct and different nature from the disease in question; on the contrary, he says, the external textures of the eye are usually affected by it. Mr. Hewson, has, however, by no means established the positions he has taken; on the contrary, the cases which he has related in his work, would conduct us to very different conclusions from what they have led him; since of twenty-five cases which he has given in his work, and which he has related with great candour, in fifteen of them mercury was used in one form or other. Now if mercury renders the system susceptible to the action of the usual exciting cause of iritis, as we shall show it does, we surely are justifiable in considering the predisposition in these cases, as much owing to the mercurial, as to the syphilitic poison.

Mr. Travers says, that during the free exhibition of calomel in strumous ophthalmia, he has repeatedly seen the iris take on the inflammatory action, and when a person is attacked with ophthalmia, whose system is charged with mercury, the inflammation is never confined to the conjunctiva, but invariably affects the deeper tunics, thus showing that it disposes these parts to take on inflammatory action. It has been asserted by those who have had the most extensive experience, that iritis much more frequently occurs in persons who have been treated for syphilis with mercury, than in those who have been cured without its use; and though our own experience has not been sufficiently extended to authorize us to derive any very decided inferences from it, nevertheless it would lead us to the same conclusion. If it should be asked why, if mercury predisposes to this disease, we do not meet with it more frequently in persons under the influence of this medicine, for the cure of other diseases? we would remark, that patients under these circumstances are less frequently exposed to the action of cold, the usual exciting cause of the disease, than those who take mercury for the cure of syphilis.

Syphilis and mercury predispose to iritis, by deranging the healthy functions of the system, and partly from requiring confinement, whereby the body is rendered more susceptible to the action of cold. That they predispose to this disease by debilitating the system, is proven by the fact, that persons, whose systems are debilitated by other diseases, are also liable to iritis when exposed to the action of cold. Two instances of this kind are mentioned by Dr. SMITH,* one occurred in a man who was under treatment for a bad fever, the other in one labouring under a severe pulmonic complaint.

Dr. Hewson, also, in his interesting work,† informs us, that in the autumn of 1815, when a contagious fever prevailed to an unusual extent among the poor inhabitants of that part of Dublin in which the Meath Hospital is situate, many suffered from ophthalmic inflammation, with such symptoms as induced him to suspect a venereal taint, and to interrogate his patients as to its truth. Finding his suspicion unfounded, he ascertained by subsequent investigation, that during convalescence from fever, and even long before this period, the internal coats of the eye became remarkably susceptible of inflammation, which was further called into action by premature exposure to cold, or unguarded application of cold or moisture to the person. For several successive years this ophthalmia continued to accompany the fever, and unless treated as the seat and nature of the disease demanded, it was liable to produce the same injury to the structure of the eye.

That cold is the most frequent exciting cause of inflammation of the iris, is demonstrated by the fact, that patients are generally aware of having exposed themselves to the action of cold, and attribute their attack to that cause. We are aware that no one is ever content, until he can ascribe his complaint to some cause, though he is frequently satisfied with the most absurd and improbable; and as cold readily suggests itself, diseases are often unjustly attributed to it. But in every case of the disease which we have seen, the patient has been able to inform us how and when he took cold, and to satisfy us that at least he was exposed to the action of that agent. They had, moreover, frequently symptoms of having taken cold, such as coryza, rawness or soreness of the fauces, &c.*

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* Edinburgh Medical and Surgical Journal.

† Observations on the History and Treatment of the Ophthalmia accompanying the secondary forms of lues venerea.

Why syphilis and mercury predispose rather to inflammation of the iris than of the conjunctiva, we shall not at present attempt to show; it is sufficient for our purpose to know that they do so.

Rheumatism, we believe, predisposes rather to inflammation of the sclerotica than of the iris, and the resemblance which the structure of the sclerotica bears to that of tendinous expansion, satisfactorily explains why that coat of the eye is disposed to take on the same form of diseased action, to which such parts are subject. When, under these circumstances, inflammation of the iris occurs, it is produced by extension of the inflammation of the sclerotica, and is not a primary affection.

Most writers consider the inflammation of the iris, when occurring in a healthy individual, or in one whose system has been affected by syphilis, rheumatism, or gout, as presenting specific differences, and hence they describe four species, namely, idiopathic, syphilitic, rheumatic and arthritic iritis, and they have attempted to point out diagnostic marks by which these several species may be designated. Entertaining the opinion, as formerly stated, that difference in the tissue affected constituted the specific differences in inflammations; and believing that the variations presented by it, as it occurs in the same tissue in different individuals, or in the same individual in different states of his system, are infinite, and not susceptible of any classification, we shall not of course adopt the divisions of authors, or notice the symptoms by which they have attempted to discriminate their supposed species. In fact, scarcely any two agree in their diagnostics, and it must be confessed that it is impossible to derive any certain marks from the symptoms and pathological characters of the several affections.

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* Eighteen cases of iritis were under care of Dr. Robertson, in 1823; of this number, four were under the influence of mercury, twelve had never undergone a mercurial course. In one instance the disease was produced by a wound of the iris. Of the four patients who were under the influence of mercury, the first left a warm bed to go to a water closet, and was out of doors; the second, after having had his hair cut, walked to the top of Arthur's Seat, where, overheated with the exertion, he sat with his hat off. The third, having a slight attack of lumbago, (by the recommendation of some friend,) poured cold water over his loins. The fourth was a person engaged in repairing the roads. He lay down on damp grass during his dinner hour.

Dr. R. says, that within a few weeks a gentleman put himself under his care, in whom iritis was evidently produced by bathing in the sea, while taking mercury for syphilis: the eye became inflamed the same evening. In these cases Dr. R. continued the use of mercury, even in greater quantity than had been previously exhibited, and in all of them with the most beneficial results. *Vide Ed. Med. & Surg. Journ.*

The usual symptoms of iritis are a contraction and irregularity of the pupil, with loss of freedom in the motions of the iris, redness of the sclerotica, intolerance of light, pain, lachrymation, and sense of distention of the globe. The increased quantity of blood determined to the iris, produces a thickening, expansion, and diminution of mobility in that membrane, and in some instances minute hair like vessels may be observed ramifying over its surface.

As the disease advances, coagulable lymph is effused, and this may take place either on the surface of the iris or in its parenchymatous structure. When in the first situation, the papillary margin not unfrequently becomes thickened, puckered, and turned towards the crystalline lens, to the capsule of which it adheres at one or more points; occasionally it forms adhesions to the cornea, and assumes the convexity of the latter coat. In the progress of the disease, the pupil contracts, loses its regular form, and some part of its margin is observed to make a different curve from its natural one, and as the iris may adhere to the capsule of the lens at one or more parts, and for a greater or less extent, the pupil will assume very different forms. Mr. Hewson says, that he has generally observed that some portion of the pupil, mostly about its superior part, preserves, in all stages, for a greater or less extent, its natural form, and that within this space, it moves a little under the influence of varying light, and also expands under that of the extract of belladonna, whilst the remaining portion is not affected by the same agents. The lymph is usually effused from one or more small patches on the margin of the iris; sometimes it falls down in the form of minute flocculæ into the anterior chamber; at others it adheres to the edge of the iris, the whole of which is occasionally fantastically fringed or tufted with it; or it may accumulate in such quantity as completely to fill up the pupil. In some rare instances, instead of lymph, blood is effused into the anterior chamber, and in such quantities as nearly to fill it: this occurrence generally alarms the patient exceedingly, but it is by no means a dangerous symptom.

When the lymph is effused in the erectile tissue, its cellular structure becomes more or less obliterated, and the motions of the iris impeded or destroyed, according to the extent of the effusion. Irregularity of the pupil, and immobility of one portion of the iris, while a degree of motion is preserved in others, will also occur in this case. Sometimes, instead of lymph, pus is secreted, and abscesses formed. Mr. Hewson describes these abscesses as occurring sometimes in the form of small tubercles which may be observed on some part of the iris, usually at or near the pupil, and on that part of it where the morbid process is most active. Now and then they are seen on the surface of the iris, between the pupil and its ciliary attachment; they are found from the size of a large pin's head to that of a small split pea; sometimes there appears but a solitary one; at others we see two or more of them unconnected; occasionally a number are clustered together, and project into the pupillary space, so as nearly to fill it up, or protrude forward into the anterior chamber; when small, they are of a dark red colour; but, when large and prominent, they are more or less white at the apex, while about the base the redness continues. While in this state, in some cases, they burst, and their purulent contents are poured into the anterior chamber; occasionally they are absorbed. After the disappearance of these tubercles, a fissure or cicatrix may often be observed in that part of the iris where they were situated.

Sometimes the abscesses leave ulcers, which penetrate the iris, and make permanent openings or artificial pupils; in these cases vision is always rendered exceedingly confused by the crossing of the pencils of light.

The colour as well as texture of the iris undergoes a change by the continuance of the inflammation, owing to the interruption given to its proper secretion, and the loss of its transparency from the effusion of lymph or blood. Sometimes it assumes a reddish hue, at others a greenish, occasionally a yellowish or amber tinge. In some instances blood is effused in minute spots, and dots like those seen on a blood-stone may be observed. A similar appearance is, however, often observed in irides never affected by disease, and this fact should be remembered. In a few rare instances it is said to become of a decided red. JANIN relates a case in which the iris resembled a piece of raw beef; BEER saw it of a blood-red colour; and CONRADI met with it of the same colour after a wound of the eye. The change of colour usually commences at the pupillary margin; occasionally the discolouration is confined to the parts most involved in the diseased action, or shows itself in irregular streaks or patches on different parts of its surface; as the disease advances, however, it usually extends over the whole surface of the iris.

Inflammation of the iris never proceeds to any great extent, without the other tissues becoming affected. Very early in the disease, the choroid and retina become involved, as is evinced by the very great intolerance of light, a symptom which is often evident before any marks of vascular action are perceptible, and generally continues after most of the other symptoms are relieved. In consequence of the pain experienced on exposure to light, the eye rolls, and is so unsteady that it is often impossible to make a satisfactory examination of it.

Like other inflammations, that of the iris is attended with pain, which, however, is not always confined to the eye-ball. Sometimes severe sympathetic pains are felt in the temple, orbit, crown of the head, or occiput; not unfrequently it affects the eye, and one or more of these parts at the same time. In some cases there is acute lancinating pains, which shoots through the orbit towards the brain; at others, the pain is of a dull aching character; while occasionally it is pulsatory, and is represented by patients as resembling that experienced in whitlow. The pain is rarely constant; in most instances it intermits, being worse during the evening and night, and abating in the morning. The intensity of the pain of course varies; in some instances it is so slight as scarcely to be complained of, in others it is so agonizing as to be almost insupportable.

The long ciliary arteries which supply the erectile tissue of the iris, pass anteriorly on the exterior surface of the sclerotica, until they reach the situation of the ciliary ligament, at which place they divide and penetrate the sclerotica. When the iris is inflamed, these vessels become very visible, and present a peculiar appearance; on the posterior surface of the eye they may be seen in distinct trunks, but about a line behind the cornea where they penetrate the sclerotica, they anastomose freely and form a beautiful red zone, between which and the cornea is a distinct pale circle. When the inflammation extends to the cornea, or if the conjunctiva and sclerotica become involved in the disease, this pale circle is less apparent. We need not enlarge on this appearance as we have described it minutely in our observations on sclerotitis.

The vessels which secrete the aqueous humour not unfrequently become affected, and instead of secreting, as in health, a pelucid, pour out a cloudy fluid, which renders vision extremely indistinct. Some authors suppose this muddy appearance of the aqueous humour to be owing to the presence of coagulable lymph; and others, to the discharge of pus into the anterior chamber from abscesses of the iris or cornea; these unquestionably render the aqueous humour cloudy, but the secretory process by which it is produced is also at times deranged, and a morbid fluid secreted.

The lachrymal gland almost always sympathises with the affection of the iris, and there is generally a profuse secretion of tears. At times the secretory process is deranged, and acrid tears are poured out, which irritate the parts over which they flow; occasionally the irritation of the gland transcends the secretory process, and its function is suppressed; this suppression adds much to the distress of the patient.

The general system also frequently sympathises with the local affection; the pulse becomes full and strong; the skin hot and dry; the countenance anxious and flushed; the patient is deprived of sleep, and delirium is sometimes present.

If the disease is not arrested, it will terminate either in complete obliteration of the pupil; or in adhesion of the iris to capsule of the crystalline lens, leaving only a very minute aperture which is most commonly occupied by an opaque portion of the capsule, or by coagulable lymph; or the iris may adhere to the cornea; or from the inflammation extending to the choroid and retina, and coagulable lymph being effused in these tissues, organic amaurosis may be produced. In a few instances, happily they are rare, profuse suppuration takes place, the iris and cornea are destroyed by sloughing and ulceration, the contents of the globe evacuated, and complete and irremediable destruction of the organ ensues.

When inflammation attacks the iris of one eye, the other is very apt to become inflamed also. Mr. WARDROP relates a case where the iris of one being inflamed, in consequence of a punctured wound, the iris of the other soon afterwards became similarly affected.

Inflammation of the iris sometimes assumes a chronic and very insiduous character; the other tissues appear not to sympathise with the primary affection, and there is no constitutional disturbance, yet vision is gradually impaired and finally destroyed, and this last symptom is frequently the only one by which the patient is made conscious of the injury that is going on. If the eye be examined, the pupillary margin of the iris will be found to be irregular, and its posterior surface adherent to the capsule of the lens, the motions of the iris are of course impeded, it loses also its natural colour. In this form of the disease, the inflammation is, we believe, limited to the serous membrane covering the iris, and sometimes to the posterior portion of it; not unfrequently it extends to that part which lines the cornea, coagulable lymph is here effused, occasioning a dimness and opacity of this part. This form might, perhaps, with more propriety, be considered as an inflammation of the membrane of the aqueous humour.

In the treatment of inflammation of the iris, the safety of the eye will generally depend upon the vigilance and decision of the practitioner; indeed, there is no disease which has a more rapid tendency to destroy vision, and none perhaps over which our treatment has a more decided and beneficial control.

The first remedy usually demanded is venesection. The quantity of blood to be drawn, must be proportioned to the constitution of the patient, the effects it produces on the system and on the disease; if the strength of the patient will admit of it, blood should be drawn until syncope or a state approaching it, be produced. One copious bleeding at the commencement of the complaint, will have more influence in arresting its progress than repeated small bleedings. Some writers recommend that the blood should be taken from the temporal artery—we are not aware that this mode of depletion possesses any peculiar advantages. After as much blood has been drawn from the arm as can be taken with safety, topical depletion by cups or leeches will be found useful, indeed in some feeble constitutions, it may supersede general blood-letting. Occasionally we meet with cases in which the propriety of even local depletion, is questionable, and we are obliged to trust to other remedies for a cure.

As useful adjuvants in lessening the force of the circulation, the neutral salts should be early administered. After the operation of these, the tartar emetic should be given in small doses, either dissolved in water or in the patient's drinks, or it may be administered in the form of nitrous powders; it will also be found useful combined with the saline purgatives.

The extracts of stramonium or belladonna should also be applied very early in the disease; when used at this time, they not unfrequently prevent entirely the irregular contraction of the pupil, and also appear to have even some effect on the general inflammation. These preparations should be smeared in considerable quantities over the eyelids and eyebrow, and if this does not produce a dilatation of the pupil, a strong solution of either of them may be dropped between the eyelids every two or three hours. When no effusion has taken place, the pupil will be regularly dilated; but where there are adhesions between the iris and other parts, the dilatation will of course be merely partial.

Professor Beer censures very much the indiscriminate employment of these narcotics to the eye, and thinks them only admissible after the symptoms of inflammation have been in a great measure subdued. He supposes they have a strong tendency, not only to weaken the powers of the retina, but also of the iris itself. We are not aw[illegible] that there is any more foundation for this censure than there is for the belief that the stramonium can make the iris contract with such force as to break up the bands of coagulable lymph which extend across the pupil; to effect which, it is recommended as immensely serviceable. The indication to be fulfilled is to hinder the closure of the pupil, for if the iris adheres to the capsule of the lens whilst it is in this state, its future enlargement will be prevented. To effect this, it ought to be used in the very early stages, after the first bleeding, and before the pupil is contracted. These narcotics act principally by lessening the sensibility of the retina, and thus diminishing the disposition of the iris to contract, on exposure to light.

It is scarcely necessary to add, that the diet should be strictly regulated, and the patient confined to a room from which light ought to be carefully excluded.

If the antiphlogistic measures we have noticed should fail to arrest the progress of the disease, and coagulable lymph be thrown out, or if the patient should not come under treatment until this event has taken place, mercury should be prescribed with as little delay, and the system affected with it as rapidly as possible. It may be used even before lymph is secreted, with unequivocal advantage; indeed, the influence of this remedy in inflammation of serous membranes is too well established to be doubted; and if we wait till the lymph is effused, it may become organized before the mercurial action can be excited. In full and plethoric habits, and where there is considerable febrile action, it is proper to delay its exhibition, till the inflammatory state of the system is reduced by depletory measures, but in feeble constitutions, and where the system has been debilitated by the previous use of mercury, or by the syphilitic poison, particularly if inflammatory symptoms are not very violent, it ought to be given at the same time we are depleting. The best preparation is the calomel, which should be given in pills combined with opium, two grains of the former with one-fourth of a grain of the latter, may be administered two or three times a day. The blue pill is also an excellent preparation, it may be used in doses of two or three grains, three or four times a day, with the occasional use of opium to prevent its running off by the bowels.

The corrosive sublimate which we spoke so highly of in sclerotitis, and which is a great favourite with some practitioners, in this disease it is not so applicable to it. That preparation must always be introduced slowly, and in small doses, to guard against its unpleasant effects on the stomach and bowels, and in the mean time, the disease will be gaining ground, and consequences may result, which cannot afterwards be remedied. We should, therefore, in this disease, resort to such means as are attended with the least possible uncertainty, and are most expeditious in accomplishing our object.

If after giving the mercury internally for six or eighth days.

the mercurial action be not excited, it will generally be advisable to employ frictions in addition, which should be continued until the mouth becomes affected; as soon as this happens, the symptoms will be alleviated. Indeed, there is no remedy, not even blood-letting excepted, that has a more beneficial control over the progress of this disease. We would not wish to be understood as implying that antiphlogistic measures alone, were not capable in any instance, of curing this affection, on the contrary, we believe some cases may be entirely arrested by them, but we question much, whether a majority of cases can be treated as safely, and effectually, without, as with mercury, and we are sure where effusion of lymph has taken place, all other remedies will fail. Even in cases of long standing, where the inflammatory symptoms have abated, and the lymph become organized, mercury will often produce the most happy effects. Indeed, there is no disease in which this Samson of the materia medica, as it has happily been called, more fully justifies by its powers, the propriety of that epithet.

In some elderly, or debilitated patients, however, and where the disease is combined with scrofula, mercury even in small quantities, or in any form, cannot sometimes be borne till the system has been prepared by tonics, and regimen. The nitric acid, and sarsaparilla may be premised in these cases, and afterwards, mercury sparingly, and cautiously administered.

We shall not hazard any speculations respecting the modus operandi of mercury in this disease, as we have nothing very novel or satisfactory to offer; those who feel curious on this subject, we refer to the interesting essay of Mr. Travers on iritis,* and the valuable work of Mr. Vetch.† There is one fact, however, with regard to the effect of mercury, that we may mention here, which is, that when iritis occurs in patients whilst under the influence of that remedy, as it sometimes does, the repetition of the mercury is proper, and its beneficial influence is as decided in such cases, as in any other. The credit of being the first to notice this fact, is, we believe, due to Mr. Travers.

To obviate the pains, which are usually very violent at night, Beer recommends that the eye-brow should be rubbed every evening a short time before the usual period of the exacerbation, with mercurial ointment united with a portion of finely powdered opium, and we have found that patients generally received much relief from its use. We have seen great relief afforded also by fomentation with the decoction of poppy heads.

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* Surgical Essays, part I.

† Practical Treatise on the Diseases of the Eye.

To calm irritation and procure sleep, the Dover's powder and cicuta will be found highly serviceable; the decoction of sarsaparilla may also sometimes be given with advantage.

Blisters are rarely, if ever serviceable in this complaint, and collyria are always injurious.

It is said, that iritis is sometimes excited by derangement of the digestive organs, and that, in such cases an emetic will cut it short; we cannot speak of this from our own experience.

When the remedies we have noticed have not been persevered in to a sufficient extent, or when their administration has been neglected, the pupil will often become entirely obliterated; even in this case if a portion of the cornea and the crystalline capsule and its lens remain transparent, the patient may be restored to a useful degree of vision, by making a new opening in the iris, and thus forming an artificial pupil.

We have thus gone over, in a cursory manner, but as fully as our limits would permit, the history and treatment of iritic inflammation. Enough, however, has perhaps been said to impress upon the reader the fact, that when left to the unaided efforts of nature, this disease rarely if ever fails to terminate in a total destruction of vision, and that the remedies at our command, if properly administered and persevered in, will generally prevent so distressing a consequence. But there is perhaps no disease of the eye that requires more prompt, decisive, and efficient treatment. It has been very justly observed that it will not do for us, in this affection, to be governed by the general principles that regulate the treatment of inflammation in other parts; the pain, redness, and state of the pulse, are here often insufficient guides. Adhesive inflammation frequently takes place, and the sight is lost, without any other warning of the extent of the injury that is going on, except a gradual loss of vision. It will not, therefore, be sufficient, to be satisfied with relieving symptoms as they occur—we should endeavour anticipate them—if we do not, the opportunity of acting with may be lost.

ART. IV. *Anomalous Case of Tumour within the Cavity of the Cranium*. By JACOB DE LA MOTTA, M. D. of Charleston, S. C. Communicated in a letter to Dr. Hays.

ANOMALOUS cases in the various departments of surgery, are conceded to be interesting and instructive to the medical votarist. In as much as they develope the insidious encroachment, and the ravages of disease, they disclose the duration of irregular actions—the wonderful extent of functional derangement, and the no less astonishing aberration in the structural condition of important organs. But there is still an essential tendency in closely observing and noting the origin, progress, and termination of *unique* and unparalleled cases. The vast and consequential results from developments in the doctrine of sympathies. This alone, establishes facts of magnitude, both to the surgeon and physician.

It is from such considerations, that the particulars of the following case were collected and thrown together, and they are recorded under impressions, they will not prove uninteresting.

The subject of our remarks was a very interesting lady, of amiable disposition, very conspicuous in her domestic relations, enjoying for many years uninterrupted good health, the mother of several children, she numbered forty-five years previous to the invasion of her malady.

In the month of August, 1826, Mrs. H—— complained occasionally of head-aches, which at first being slight, were attributed to ordinary causes. Increasing in violence, and unabating in severity, she was advised to consult her family physician. The disease was pronounced a rheumatic affection of the head, and treated accordingly. The remedial means being directed to alleviate pain, the general depleting plan was adopted. Thus far I can state, only from information.

Indisposition having deprived her physician from further rendering his services, I was requested to attend the case.

The first visit brought to my observation the following particulars. I found the lady sitting up, her head somewhat reclining, and labouring under excruciating agony, seated over the frontal sinuses, and extending above the orbitar processes—right eye protuberant, and pushed about four lines from its bit, and also the seat of much pain—a slight discharge of mucous from the right nostril, with a stoppage, and entire loss of the power of smell on that side of the nose. All efforts were inefficient to propel air from that channel, the obstruction seemed complete; and although the mucous discharged was not considerable, still it was very constant. Her appearance, in other respects, indicated much suffering, and she complained constantly of sickness and derangement at the stomach. On inquiry, she stated that she had regular attacks of fever, somewhat of the intermittent character, occurring every other day, and ushered in with a slight chill—that sometimes the fever would occur daily, making its appearance at noon, increasing and continuing till seven o'clock in the evening, always accompanied with increased pain, and to use her own language, "with a throbbing sensation, and great agony just about the forehead, and in the globe of the eye;" a dimness of sight, or that kind of imperfect vision, described as produced from cobwebs or floating particles placed before the eyes, which evidently grew worse a few days previous, and created great apprehension for the loss of sight. She had been compelled to resort to the use of the tinct. opii, both internally and externally, which in some instances mitigated her sufferings.

From such a representation of a case of some weeks standing, I directed my attention to the state of the protruded eye—discovered the pupil rather dilated, and but slightly affected by the sudden impression of light—the condition of the other presented as yet no deviation in this particular. On inspecting the nose, there was an evident discharge of a glairy mucous, which seemed the ordinary secretion from that part rather inspissated; and on separating the nostril of the side in which the obstruction existed, I plainly detected the presence of something extraneous, visible to the by-standers at some distance, and on the first glance resembling a polypus tumour. Passing the probe around it, my mind was on the instant struck with the idea of that kind of tumour described by Richter, as an enlargement and elongation of the schniederian membrane. I determined to remove it, which was readily done by an appropriate pair of forceps—it was small, evidently membranous, and vascular. From this period, the discharge continued of the same consistence, increasing in quantity, and from its accumulation and constant flow, I was convinced the whole of the lining membrane of the nostril, extending high up that channel was diseased. This opinion was corroborated by a medical friend. I directed some detergent application to be injected into the nose, and invariably found it impervious to the passage of the fluid to the posterior nares. An obstruction undoubtedly existed. What occasioned it, and how it was to be removed, and what produced the want of smell, even to the most active and irritating agents, were now to *me* matters of speculation. A probe introduced, reached as far as a line drawn parallel with the inner canthus of the eye, and when it was directed backwards, would with a little difficulty enter the fauces.

The case presenting some complexity as regards local and constitutional derangement, the plan of treatment was predicated on general principles. I directed the bowels to be kept open by aperients, which we soon perceived, improved the state of the digestive organs, and somewhat lessened the pain, which obviated the further necessity for the use of opiates. The application to the nose was continued. I ordered a blue pill to be taken every night at bed time. Under this state of things, my patient continued for about seventeen days; the discharge from the nostril assumed a different consistence, sanious, offensive, and tinged with blood; more profuse, and flowing posteriorly into the throat. The eye evidently more projecting, with an ecchymosed appearance beneath the lower lid—a kind of spontaneous discoloration, as if the part had been contused by a blow.

No visible impression or improvement having been made on her situation, a consultation was proposed and effected with Dr. John Wagner; who, having carefully examined the case and inquired into all the *minutæ*, concurred in a continuation of the plan of treatment. Our visits were regular, and we watched very narrowly the progress of this unpromising case. All the symptoms above described, increased in violence—the dimness of sight progressed with rapidity—rays of light feebly gleamed on the retina—all was gloom—and then total darkness—and all that could cheer the drooping spirit, was now merged in eternal night! The full blaze of a candle made not the least impression on the iris, and the patient could not distinguish between night and day with either eye.

Our patient still suffered from pain, though less in degree, yet, there were symptoms strongly indicating a compression of the brain. We were called to two sudden attacks of convulsions. The lancet was used, which tended to cut them short, and we were pleased to find there was no recurrence or predisposition to relapse. Her mouth began to be slightly affected by the use of the blue pill, and on this the pain in the head and eye diminished, and for several days were almost banished. Although this circumstance was calculated and did inspire hope for her recovery among her family and friends, still the *hydra* with appalling aspect, was constantly presented to our view, and kept us in dread of a fatal termination. The eye still projected almost from its socket; a direct line drawn perpendicularly from the superior orbitar process of the frontal bone, would have intersected about two-thirds of its sphere. The want of vision continued to exist, the discharge from both nostrils was profuse, purulent, and occasionally mixed with grumous blood. Oppression at the præcordia began to be very destressing, and so abstracted her mind from her other sufferings, as to evince a concentration of all morbid action to this part.

These appearances continued for about five weeks, when a projection was discovered in the inner canthus of the eye, a little above the puncta lacrymalia, accompanied with inflammation and tumefaction of the palpebræ and conjunctiva of the eye. There was a constant, though small discharge of purulent matter, that flowed down the cheek. The tumour increased to about the size of a small nutmeg. On perceiving a whitish spot and some fluctuation, it was determined to make an opening in it with a common lancet, which being done, it discharged an inspissated fluid, closely resembling that from the nostrils. A soft bread and milk poultice was occasionally applied, attended on its removal, with an accumulation of purulent matter, sometimes variously discoloured, at others ichorous. There was for some days an almost cessation of pain, with a good flow of spirits, elevated at times a little above the natural standard, which rendered the situation of our afflicted patient, more interesting to attendants and friends. In this condition she remained from the middle of February to the latter end of March, daily, though not very rapidly declining. She finally became comatose. At intervals she could be roused, and replied with reason and promptness to any interrogatory. The closing scene now approached—her pulse began to flag—the prostration more evident—the stertor increased, with total loss of all voluntary and involuntary action. Supervening to a suppression of all natural functions, she calmly and silently sunk under the grasp of death.

Permission having been granted for an inspection of the diseased parts, about five hours after death, assisted by Dr. Wagner, we proceeded to an examination. Our suspicions having previously prevailed, as to the existence of a tumour of some kind pressing on the optic nerves, which might have occasioned the deprivation of sight, it was desirable to ascertain, if possible, the condition of the brain in the first instance; and, with the view of facilitating our inquiries, we proceeded as follows.

A transverse incision of the scalp was made, extending from one temporal bone to the other. It was then separated; one portion thrown forward over the face, the other backwards. The whole upper part of the skull was then removed by sawing it out; and, on raising it up, we perceived more than ordinary adhesions between the bony substance and the dura mater. The blood-vessels were much engorged. The dura mater was then separated from the anterior portions of the brain. On lifting the anterior lobes, laying immediately over the orbitar plates of the frontal bone, we detected a tumour rising upwards, rather inclining to the right side, of the size and shape of a lemon; of a yielding nature; of medullary consistence, or partaking of the nature and structure of the brain. Although of a medullary character, yet perfectly free and independent of the brain; forming no evident portion of it, as there seemed to be no deficiency of this substance. This covered both optic nerves, in the situation they are wont to lay on the sella turcica, just before they enter the orbits of the eyes. Under the left anterior lobe, we found another tumour attached to the first, but of smaller size, and touching also the optic nerve of the same side. On endeavouring to separate the adhesions formed with the adjacent parts, we discovered that the two tumours described, were appendages to a larger and more irregular mass, of the same consistence, occupying the place where the sella turcica is usually situated. No vestige of bony structure could be detected; we could not even find the ethmoid cells. This tumour extended downwards and forwards, filling all this space, and running into the nose, giving out another portion, that was sent to the orbit of the right eye, and that constituted the projection in the internal canthus, already stated, and in which an incision was made from without.

In order to a perfect and complete examination, we removed part of the orbitar plates of the os frontis, and on raising the whole tumour or congeries of tumours, we perceived that a part of the right orbitar plate, was alike absorbed with the sella turcica, which gave access to the tumour in the cavity of the orbit, and which tended to produce the projection of the organ of vision.

In the effort made by the tumour to enlarge the space it occupied, there was accommodation also by removal of the partition of the side of the nose that leads into the maxillary sinus, or antrum highmorianum. After it was displaced, a finger readily passed from upwards into this cavity. The vomer was pushed to the left side, and its membrane thickened and altered in its appearance. The superior and inferior turbinated bones, were entire, yet partaking of the ravages of the disease, that extended to the bones of the face and neighbouring parts. About these were noticed accumulations of pus. The other portions of the brain were unaffected, with the exception of an apparent turgescency of the blood-vessels, and irregular adhesions.

The tumour we should suppose, would weigh about six ounces. On its being immersed in alcohol, it became so soft, that we apprehended it would separate and be lost. We removed it to a saturated solution of the oxy-muriat of mercury, which soon hardened it, and it retains its original formation. An incision made into its substance, resembled that of the substance of the brain. I shall forbear offering any opinion, that may be construed as speculative, on the probable production, nature or consistency of this extraneous body. It is evident it is not of a carcinomatous character.

The opinion may be hazarded without apprehension of incurring refutation, that much of the sufferings of our patient were mitigated by the rigidly moderate regimen, which in a great measure kept down arterial action, and which with appropriate depletory means, was never suffered to rise above a certain standard.

ART. V. *Observations and Experiments on the Pharmaceutical Preparations and constituent principles of Opium.* By GEORGE W. CARPENTER, of Philadelphia.

THIS important article, from its extensive usefulness, in modifying and alleviating the most afflicting and painful diseases incident to human nature, merits perhaps the most conspicuous place in the *materia medica;* yet from being injudiciously administered, and more particularly from its pharmaceutical preparations, being improperly made, it frequently produces injurious and distressing consequences. With the hope of remedying some of these inconveniences, I have made a series of experiments, the results of which are contained in the following observations. Before, however, entering upon the pharmaceutical preparations, it may not perhaps be improper to offer a very concise view of the natural history and physical characters of this article, as it occurs at the present day in our commerce. Opium is the product of the Papaver somniferum, and is the inspissated juice of the capsules of that plant. It has been improperly termed a gum by many authors, and the error prevails to the present day. It is a native of the southern parts of Asia. It may, however, be raised in our gardens, and is now cultivated in England on an imposing scale, which has been increasing for several years. It possesses the same properties as the Turkey or East India opium, and is more pure, containing a larger proportion of soluble matter. The Turkey opium has hitherto possessed the best reputation, and has been considered superior to any other. Dr. THOMSON* informs us, that he obtained from Turkey opium nearly three times more morphia than was yielded by the same quantity of East India. I have treated equal quantities of Turkey and English opium by the same process, and obtained twenty per cent. more morphia from the latter than the former; this would sanction the belief of the superiority of the English; which superiority, I think, is to be attributed to the careful manner in which it is prepared. The following are the prominent characters of the several varieties of opium, and by which they may be easily distinguished.

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* London Dispensatory.

Turkey opium is of a reddish-brown colour, possessing a strong narcotic odour, of a solid and compact consistence, when dry has a shining and uniform fracture of a dark-brown colour producing a reddish-brown powder; the best kind is generally in flat pieces.

East India opium is of thin consistence, sometimes almost like that of honey; when dry it is more friable, its colour nearly black, and possesses less bitter and a more nauseous taste than the *Turkey;* it has a strong empyreumatic odour, and not the narcotic heavy one which is so sensible in the Turkey; it is considerably cheaper and much inferior in strength to the latter, and according to Dr. Thomson contains but one-third the quantity of morphia and a larger proportion of narcotine, which renders it a far less desirable article. Dr. Coxe, in his valuable American Dispensatory, remarks, that one-eighth the cakes is allowed for the enormous quantity of leaves with which they are enveloped. This opium is little used in this country, and is seldom, if ever to be found in the shops of our druggists.

English opium is generally in smaller cakes, frequently thin and flat, of a more permanent consistence, of a clear smooth fracture, and is destitute of leaves, stalks, and other impurities which generally accompany opium. It has the general character of being superior in quality to the Turkey, which *chemical analysis*[*] has determined. The quality of opium differs very materially, even that from the same country, climate, soil, &c. which arises no doubt in many instances from the manner in which it is prepared and cultivated. It is frequently found in our market mixed with leaves, stalks, seeds, &c. and from the great proportion of these admixtures in some opium, it would lead to a conjecture, that the leaves were worked in when the opium was in a very soft and recent state, for the purpose of increasing the weight and consistence. I have even seen opium whose external characters possessed all the features of superior quality, and when broken, exposed a large proportion of the leaves and capsules of the poppy, which, although it does not alter the particular effects, must diminish the activity of the opium in direct proportion to the quantity and weight of these extraneous and insoluble matters, and I have ascertained by careful experiments that the quantity of soluble or extractive matter by the same menstrua and process, yielded by different parcels of opium, varies from four and a half and five to six drachms in the ounce.

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[*] It is to chemistry that we are indebted for many important facts in relation to opium, and for the knowledge of morphia and narcotine, the two active principles of opium—two principles of a directly opposite nature existing in the same substance, and exercising individually their particular effects on the constitution. Many are opposed to chemical analysis as a means of discovering the virtues of medicines, and among others Dr. Young,[†] who states as an argument that Geoffroy discovered by chemical analysis that the soporific quality of opium depended upon its sulphur. We might agree with Dr. Young, if the science of chemistry had not advanced since the period alluded to, and did experiments upon opium now lead to similar conclusions. We might as well reject as useless the analysis of cinchona bark, because a chemist has asserted that the comparative quantity of the active principles, (quinine and cinchonine,) yielded by the Carthagena bark, was in proportion to the quantity yielded by the Calisaya as 1 to 70. If errors so palpable would have retarded the inquiries and labours, or diminished the zeal of the

[†] Young on Opium.

The consumption of opium is almost incredible. In the year 1800, 46,808 lbs. were consumed in Europe. In the year 1809, the revenue which the Bengal government derived from the sale of opium, was £ 594,978, and the exports of opium from Calcutta to China alone, in 1811-12, amounted to 4,542,968 sicca rupees—£ 567,871.* The supply for Calcutta for 1827, is rated at 13,700 chests. The supply for 1826 was 10,300 chests, making an increase of 3,400 chests in the last year.

Although opium is prohibited by the Chinese government, yet about 2000 chests are annually imported into Canton, the average sale price being 1200 dollars per chest, making the amount annually expended by Canton for this drug, the enormous sum of 24,000,000 dollars. About 40,000 pounds are annually imported into London.

In the provinces of Bahar and Banares, among the most productive of the East Indies, the common product of opium is twenty-four pounds to an acre, besides which the cultivator reaps about forty pounds of seed. The preparation of the raw

scrutinising chemist, the science, instead of holding the elevated rank it now possesses, would long since have dwindled into obscurity. Errors and absurdities will naturally creep into every department of science.

* Hamilton's East India Gazetteer.

opium is under the immediate superintendance of the company's agent, who adopts the following method to prepare it. It consists in evaporating, by exposure to the sun, the watery particles, which are replaced by oil of poppy seeds, to prevent the drying of the resin. The opium is then formed into cakes, and covered with the petals of the poppy, and when sufficiently dried, it is packed in chests with the fragments of the capsules, from which poppy seeds have been threshed out. It is said opium is sometimes vitiated with an extract from the leaves and stalks of the poppy and with the gum of the mimosa.

The cultivation of opium in England, if extensive, will no doubt influence the price of this article in our market.*

It has lately been more successfully cultivated by a Mr. Young, than any other person who has yet attempted its culture in Great Britain,† and from which more flattering expectations are entertained of its success. Dr. Coxe, however, in his standard work, the American Dispensatory, observes, it is apprehended, the climate of Great Britain is an insuperable obstacle to its becoming a profitable branch of agriculture. It has been obtained in the United States, where this objection will not prevail.‡ I think the southern states, particularly the Carolinas and Georgia, are admirably adapted, from climate and soil, for the cultivation of the poppy, and if properly managed, would no doubt yield a source of considerable profit to the cultivator, if not an immense revenue to the states, and a most important addition to the productions of our country.

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* Messrs. Cowley and Stains, of Winslow, in the season of 1822, raised 143 lbs. of excellent opium from eleven acres and five poles of land, for which they received a premium from the society instituted at London, for the encouragement of arts, manufactures and commerce. A medal has been given by the society to J. W. Jeston, Esq. Surgeon, for an improvement in collecting the juice of the poppy, which consists in collecting it immediately after it exudes from the capsules, instead of allowing it to be inspissated on the capsule. The capsule is scarified with a sharp instrument, gauged to a proper depth, when the juice is scraped off with a kind of funnel-form scoop, fixed into the mouth of a vial; when one vial is filled, the scoop is removed to another, and the juice is evaporated in shallow pans; some varieties are much more productive than others. (See Transactions of the Society for the encouragement of Arts, Man. and Com. Vol. 41.)

Mr. Ball, in 1796, received a premium from the society for the encouragement of arts, for a specimen of British opium, little inferior to the Oriental. (Transactions of the Society of Arts, vol. xiv. pp. 260, 270.)

† Edinburgh Philosophical Journal, No. II. page 262.

‡ Philadelphia Medical Museum, Vol. II. page 428.

The opium raised in England, has been used for several years by physicians and surgeons, who pronounce it superior to the best Turkey and East India opium. One thing is very certain; it is prepared with more care and attention, and is more free from leaves and other impurities; the fracture of English opium when dry, is as smooth and uniform as liquorice; what I have seen has been put up in small flat cakes, and of a good consistence. Opium is frequently put up in a soft state, and packed with a large proportion of leaves to prevent the lumps adhering; these leaves adhering to the sides, are gradually taken into the body of the opium, which, with that previously incorporated with it, is the cause of seeing opium in the condition of impurity as already described.

Extract of Opium.—Among the advantages which the extract of opium possesses over the crude opium of commerce is, that all the fæculencies and impurities having been separated, you obtain the soluble and active portion of the opium in a pure state, and as the insoluble and impure parts exercise no effect, and constitute a considerable proportion of bulk and weight, the opium of commerce must differ in proportion to the amount of these impurities, and consequently cannot be depended upon so well as the extract for activity or uniformity of strength. The extract of opium, as it is generally made, is very objectionable, not being more active than crude opium, and consequently is seldom or ever employed by our physicians. From various modes and different menstrua which I have tried, I find the following to make the most eligible preparation, possessing most advantages both in the activity and persistency of the extract, as well as having the decided superiority over crude opium, by affording all its desirable effects, without any of its inconveniences or disadvantages.

Denarcotized acidulous Extract of Opium.—Digest ℥i. coarsely powdered opium in ℔i. sulphuric æther of the specific gravity .735 for ten days,* occasionally submitting to a moderate heat in a water bath, distil off the æther and add fresh portions until it ceases to take up narcotine or act at all upon the opium, which may be readily known by dropping a little on a clean pane of glass which will leave no trace when the opium is completely exhausted, the second or third distillation will prove sufficient, most of the æther may be saved if prepared with care and in a proper apparatus. Professor Hare* recommends the digestion of the opium in æther, to be performed in the Papin's digester, submit the opium thus treated, to the action of spt. vin. rect. ℥viii. acetic. acid. fort. ℥j.† aqua ℥vii. and digest for seven days, filter and evaporate in a water bath to the consistence of an extract. This in fact will be an impure acetate of morphia, possessing most of the advantages of that valuable medicine. One ounce of the best Turkey opium yielded by this process ʒvi. of extract. Laudanum and other preparations may be made of the usual standard, calculating ʒvi. of the extract equivalent to ℥i. of opium.

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* Where it is necessary to prepare it in haste, less time may be employed by submitting it more frequently to the temperature of ebullition.

Denarcotized acidulous Tincture of Opium.—Digest ℥i. of coarsely powdered opium in one pint of sulph. æther, s. g. .735 for ten days, occasionally submitting it to the influence of a moderate heat, until it ceases to act upon the opium, separate the opium and dry it, then digest in spt. vin. rect. ℥viii. acetic. acid. fort. ℥ii. aqua ℥vi. for seven days, and filter. This preparation will be found to possess great advantages over laudanum and the black drop of the shops, to which it will be much preferable, inasmuch as it will be destitute of the stimulating principle, (narcotine,) which produces such distressing effects, and frequently forbids the administration of opium, where it might otherwise be extremely useful, the addition of acetic acid will contribute much to increase the calming or sedative effects, which are most generally desired, and for which opium is particularly given. By its union with the morphia, it forms in solution the active sedative salt of opium, (acetate of morphia,) and differs only from the solution of the acetate of morphia of the shops, in its state of purity, and as the extraneous matter with which it is associated has no effect on the animal system, it may be considered as good an article, and should be preferred for general use, in consequence of being much less expensive. As this preparation will always possess uniform strength, and a like proportion of opium, it certainly deserves a conspicuous place among our pharmaceutical preparations, and justly merits to supersede entirely the common black drop of our shops. which is a very uncertain preparation, differing every where in activity from the indefinite and vague manner it is directed to be made, to say nothing of the worse than useless articles which enter into its composition, such as yeast, nutmeg, and saffron.* The black drop owes its superiority over laudanum to the acetic acid of its composition, and to that *alone*, and it will be admitted by those conversant with the articles in question, that acetic acid exercises a most powerful influence in modifying the effects of opium.

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* Vide preceding number of this Journal, p. 78.

† Acid pyroligneous, pure, (concentrated.)

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* It is a singular circumstance, that so imperfect and unscientific a preparation should so long have maintained a place in our materia medica. I believe there is no formula, not even for the most innocent compound, so extremely indefinite, and allowing so great a scope to the judgment of the operator. In the first place, the vinegar containing the opium, nutmeg, and saffron, is directed to be boiled to a proper consistence. The activity of the preparation will consequently be subject to as much variation as the ideas of persons may differ in relation to what is termed a proper consistence, and while one person after evaporating perhaps one-eighth of the menstrua, would consider it of proper consistence, another might think it necessary to reduce it one-fourth, a third might conceive that even one-half was the right consistence, and the strength of the preparation would consequently be subject to a like enormous variation. In the second place we are directed to digest for seven weeks, and then place in the open air until it becomes a syrup; we cannot see the propriety of digesting so long a time, if at all, when the menstrua, if not saturated by the previous boiling, has at least, taken up all its soluble matter. Exposing it to the air until it becomes a syrup, is subject to as many objections as boiling to a proper consistence, and is almost as indefinite, as the consistence of a syrup, is of no fixed standard, but varies from a thin fluid, to the density of honey. It is lastly directed to be bottled, and to add a little sugar to each bottle, what quantity is meant by a little sugar, and what size the bottles are, to which it is to be added, we are left to conjecture; independent of the useless addition of sugar to what is already a syrup; the strength of the article must be diminished in proportion to the size of the bottles, and quantity of sugar to be added; we think an article so active as the black drop, should be prepared with more care, and particular and specific directions given for the mode of its preparation. An ingenious essay upon this subject is given by Mr. THOMAS EVANS, in the Journal of the Philadelphia College of Pharmacy.

This I can account for in no other way than by its uniting with the morphia, thereby rendering it much more soluble, and consequently facilitating its effects on the constitution, which are directly sedative, while the effects of opium in its natural state are stimulating.*

It has been recommended, by Mr. Robiquet, to make a watery infusion of the opium, and evaporate the aqueous solution to the consistence of thin honey, which is to be digested in æther, instead of the powdered or shaved opium, (as described in the above, and Dr. Hare's formula given in the preceding number of this journal.) I consider this a worse than useless expenditure, for the æther will act fully as well, if not more readily, upon opium in powder than upon an extract containing water, and it is generally admitted, at least by the best authorities, Coxe, Thomson, and Paris, that the narcotic powers of opium are impaired by boiling in water, under exposure to air, hence it is that the officinal preparation, opium purificatum, which formerly was highly recommended, is found to be no better, if not less active, than crude opium, from which circumstance it has become almost obsolete, and, rarely to be found in our shops. Under this article, Dr. Coxe, in his American Dispensatory, very justly observes, that in consequence of the changes which opium undergoes by solution and subsequent evaporation, (alluding to the opium purificatum,) well selected pieces are to be preferred to this preparation. I cannot see the object in, or the advantage that can result from, making a watery extract, as the opium deprived of narcotine, will be quite as subject to the action of proof spirits, or any other menstrua, with its fæculencies, as the crude opium. We do not make a watery extract of opium in the preparation of laudanum, and it would be quite as necessary in this case as in the former. Besides, water is not the most eligible menstrua for the solution of the active matter of opium.

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* Dr. Joseph Hartshorne, in consequence of the uncertainty of the strength of the black drop of the shops, has adopted the following preparation, which has been extensively employed, and found to possess all the advantages of that article:—

Turkey opium - - -	℥j.
Strong vinegar - - -	℥vj.
Alcohol - - - -	℥iv.

Triturate the opium with vinegar, add the alcohol, and digest for ten days

Morphia is sparingly soluble in water, and the meconiate nearly the same, you, therefore, obtain but a portion of the sedative principle, as a part of the morphia will remain with the fæculencies undissolved, consequently, with an increased labour and expense, a less active preparation is obtained, than if the crude opium were at once submitted to the action of æther, and the residue to proof spirits, as in the above formula, to which the addition of acetic acid is an admirable improvement, rendering the morphia more soluble, and consequently more active, in the same manner, and nearly in the same ratio, as sulphuric acid united with quinine, (by increasing its solubility,) renders it much more active and efficient. Dr. Thomson, speaking of morphia, observes, that it being scarcely soluble in water, or in the fluids of the stomach, in its uncombined state, does not display in a striking manner its properties when exhibited alone, but these are very striking when combined with an acid, particularly the acetic. I would here remark, that the acetate of morphia,* of the shops, is a sub-acetate, and is less active than the acetate or super-acetate, which, being a deliquescent salt, must necessarily be kept in solution; it is, therefore, requisite in making the solution from the sub-acetate, to add acetic acid rather in excess than under neutralization. The following is the formula I have adopted, which will make a handsome solution, and is a preparation that will keep:—

Sub-acetate of morphia, - -	grs. xii.
Alcohol, acidulated with twelve drops of acetic acid (pure *concentrated pyroligneous acid,*) - - -	ʒi.
Distilled water, - - - -	℥i.

Dissolve the morphia in the acidulated alcohol, and add by degrees the water, and filter. Dose of the solution, from fifteen to twenty drops.

This preparation has been very successfully used by Dr. Holcombe, of Allentown, and Dr. Canfield, of Arneytown, New Jersey, in cases where other preparations of opium could not be administered, in consequence of producing those unpleasant and distressing sensations which frequently result from their use. This preparation is now extensively employed, and is attended with the most desirable consequences.

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* I found, in one instance, the morphia under the name of acetate of morphia, perfectly uncombined with acid. This is a much less active medicine, and it is therefore highly important to test this salt where you wish to administer it in substance. When in solution it must be united with acid, as morphia is insoluble in water.

Narcotine.—By the following process I obtained narcotine in a perfectly pure state.

Digest ℥i. of coarsely powdered opium in one pint of æther, for ten days, frequently submitting it to ebullition in a water bath, separate the æther and add fresh portions until the opium is exhausted, evaporate at the common temperature of the atmosphere, by placing the ætherial solution in a salt-mouth bottle, remove the stopper, and cover the mouth with bibulous paper, to prevent impurities falling in, and protract the evaporation. As the æther recedes, it leaves the sides of the bottle coated with crystals of narcotine, as the solution becomes more dense, the crystals enlarge and accumulate, and the bottom of the vessel is covered with large transparent crystals, accompanied with a brown viscid liquor, and extract, which contains an acid, resin, caoutchouc, &c. Separate these substances from the crystalline mass and wash the salt in cold æther, to separate more effectually the extract or colouring matter. After the crystals have been sufficiently washed, dissolve them in warm æther, evaporate as before, when most beautiful snow white crystals of perfectly pure narcotine will adhere to the sides of the vessel. Those on the sides of the bottle assume plumose and arborescent forms, which, being made up of delicate acicular crystals of a somewhat silky lustre, exhibit a most beautiful appearance. As the ætherial solution becomes more dense by evaporation, the crystals enlarge, and the bottom of the vessel, as before, is covered with pure narcotine, assuming the rhomboidal prismatic form, with some beautiful modifications of macled crystals. By picking out the largest and most regular crystals and again dissolving them and evaporating and repeating the same process, each time selecting the largest and best crystals, I obtained crystals one-eight of an inch in diameter, and I believe by continuing in the same manner, much larger might be obtained, as they increase in size by every crystallization.

Resin, Caoutchouc, Oil, and Acid.—These substances are the constituents of the extractive matter which covers the crystals, and is separated in the manner above described; on evaporation it forms an extract without signs of crystallization. This substance appears to possess all the heavy narcotic odour of the opium. The narcotine, when perfectly separated from this substance, has very little odour, and the denarcotised extract and laudanum possesses less; in fact, so little, that it could hardly be detected as a preparation of opium by the odour, the strong odour of the extract arises from the oil of opium which it contains. The activity of BAUME's celebrated extract, is considered by NEUMANN, to reside in the oil and resin. The acid which exists in this compound, has not been sufficiently examined to say any thing definite in relation to it. The characters of the caoutchouc are very prominent. I have not yet tried the effects of this combination upon animals, nor have I seen any description of it, but judging merely from its sensible characters, it would appear more active than the narcotine.

Morphia.—This substance exists in opium, united with meconic acid; its action on the human body is that of a direct sedative, and possesses all the advantages which we may expect to find in opium, without any of its inconveniences. Different modes for the preparation of this article have been described by ROBIQUET, DEROSNE, CHOULANT, STERTUERNER, and others; Dr. Thomson gives an easy method to obtain it in a state of purity. He employs ammonia instead of magnesia to decompose the natural meconiate, &c. (see Annals of Philosophy for June, 1820.) The sedative powers of morphia becomes more manifest when combined with an acid, particularly the acetic, which arises from increasing its solubility. Morphia is very soluble in olive oil, and according to the experiments of Mr. MAJENDIE, the compound acts with great intensity. I am indebted to Dr. Coxe, for the following interesting history of the crystalline forms of its saline compounds.

The *carbonat* crystallizes in short prisms.

Acetate in soft silky prisms, is very soluble, and extremely active—more so than any other of its combinations.

Sulphate in arborescent crystals, next in solubility to the acetate, and rather less active.

Muriate in plumose crystals, much less soluble, when evaporated, it concretes into a shining white plumose mass on cooling.

Nitrate in prisms grouped together.

Meconiate in oblique prisms sparingly soluble.

Tartrate in prisms.

From either of the above combinations, morphia may be separated by ammonia.

The acetate of morphia is the most active preparation, and as it is a very deliquescent salt, is extremely difficult to obtain in crystals; under these circumstances the following process has been recommended to convert the morphia into the acetate. Take morphia, four parts, distilled water, eight parts; dilute the morphia in a porcelain vessel, afterwards add acetic acid, sp. gr. 1.075, or pure concentrated pyroligneous acid until turnsole paper becomes scarcely converted red, evaporate the solution to the consistence of syrup, continue the evaporation slowly, either in the sun or in a stove, collect the salt and reduce it to powder.*

The sulphate is the next most active salt of morphia, and is employed where patients have been accustomed to the use of the acetate, for generally, by varying the salts of alkaline medicines, their action may be kept up longer without increasing the dose too considerably. Formulas for the preparation of the acetate and sulphate in solution, syrup, pills, &c. are given in Hayden's Formulary and Formulaire de Montpellier. The other combinations of morphia with the exception of the citrate, tartrate, and meconiate, have not yet been employed in medicine.

Meconic acid exists in combination with morphia in crude opium, forming a meconiate of morphia; it is to this salt that laudanum owes its narcotic effects. Our distinguished chemist, Dr. Hare, has given, in the preceding number of this journal, an easy process for obtaining this acid, and also a very delicate test and easy mode of detecting minute quantities of opium in solution; his observations on this subject are well worthy the attention of the chemist and pharmaceutist.

Fæculencies, &c.—Fæculencies and insoluble matter consist chiefly of the leaves, capsules, and stems of the poppy; besides these, however, extraneous matters are frequently found, having been fraudulently introduced to increase its weight. The insoluble matter in different parcels of opium vary from one and a half to near three drachms in the ounce.

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* Pharmacopia Gallica, 1818, p. 387.

The effects of opium are generally so well known, that it is unnecessary to give a description;* it sometimes, however, exercises very remarkable and singular effects on the constitution, differing materially in its action on different individuals. A case is mentioned in the Archives Générales de Medicine, for Dec. 1826, of a lady of nervous temperament, who on taking a draught in which there was half a grain of acetate of morphia, suddenly sunk into a state of syncope, which continued for two or three hours; it was several times repeated at intervals of an hour or two, and attended with the same results. Dr. Dewees met with an instance in which the opium invariably purged, and was in the habit of employing it as a purgative in this case, in doses of two grains, purgatives not producing their usual effects; he has also met with one instance in which opium excited violent coughing, even when administered in enema.* Dr. Rousseau informed me he had a case somewhat similar to the former, (an unmarried lady of thirty-four years,) where opium universally acted as a purgative; the denarcotised laudanum administered by Dr. Rousseau to the same patient, did not produce this singular effect, although continued for several days.† This same gentleman also informs me that it is not unfrequent in his practice to meet with cases in which opium acts as a purgative, and has discovered that the addition of tartaric acid increases considerably its purgative effects.

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* The following particular account of the effects of opium on the Turks, by Baron de Tott, may be interesting to many readers. Speaking of those who give themselves up to its immoderate use, he says:—Destined to live agreeably only when in a sort of drunkenness, these men present above all a curious spectacle, when they are assembled in a part of Constantinople, called *Teriaky Tcharchissy*, the market of opium-eaters. It is there that, towards evening, one sees the lovers of opium arrive by the different streets which terminate at the Solymania, whose pale and melancholy countenances would inspire only compassion, did not their stretched necks, their heads twisted to the right and left, their back bones crooked, one shoulder up to the ears, and a number of other whimsical attitudes, which are the consequences of the disorder, present the most ludicrous and the most laughable picture. A long row of little shops is built against one of the walls of the place where the mosque stands. These shops are shaded by an arbour, which communicates from one to the other, and under which every merchant takes care to place a small sofa for his customers to sit on, without hindering the passage, who place themselves in succession to receive a dose proportioned to the degree of habit and want they have contracted. The pills are soon distributed; the most experienced swallow four of these, larger than olives, and every one drinking a large glass of cold water upon it, waits in some particular attitude for an agreeable reverie, which at the end of three quarters of an hour, or an hour at most, never fails to animate these machines, and make them gesticulate in a hundred different manners, but they are always very extraordinary and very gay. This is the moment when the scene becomes most interesting, all the actors are happy, each of them returns home in a state of total ebriety, but in the full and perfect possession of an happiness which reason is not able to procure him. Deaf to the hootings of the passengers they meet with, who divert themselves by making them talk nonsense, every one of them firmly believes himself in possession of what he wishes; they have the appearance and the feeling of it; the reality frequently does not produce so much pleasure. The same thing happens in private houses, where the master sets the example of this strange debauch. The men of the law are most subject to it; and all the dervises used to get drunk with opium, before they learned to prefer the excess of wine. There are instances of persons getting drunk indifferently with opium or with brandy. There is a decoction which is made of the shells and seeds of the poppy; this the Persians call *locquenor*; they sell it publicly in all their cities, as they do coffee. The Persians say it entertains their fancies with pleasant visions and a kind of rapture; they very soon grow merry, then burst into a laugh, which continues till they die away in a swoon. It is found by those who have a disposition for jesting to increase that extremely. After

The several preparations of opium as above described, may be procured from Charles Marshall, Druggist, No. 221, Market street, Philadelphia.

It is stated that highly rectified æther is the only menstrua for the solution of narcotine. If this is the fact, I cannot

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the operation of this remedy, the body grows cold, pensive, and heavy; and in this dull and indolent situation it remains till the dose is repeated. It is curious to observe the countenances of those who use this decoction, before its operation, and when its effects have taken place. When they come into the decoction-house, they are dull, pale, and languid; but as soon as the remedy begins to operate, they are quite changed; they run into all the extravagancies of mirth and laughter, and such an uproar is produced, that it would be more proper to give it the name of the mad-house than decoction-shop.—(*Crumpe on Opium.*)

* See the preceding number of this Journal, p. 147.

† Dr. Rousseau has since informed me, that on further continuing the use of the denarcotized tincture, the purgative effects recurred, and he was consequently obliged to suspend its administration.

understand how laudanum contains this principle when its menstrua is nothing stronger than proof spirits, and that nearly saturated with the gummy, resinous, and other soluble matters of the opium.

I am about instituting some experiments upon the residue of opium after laudanum has been made, and also upon the matter precipitated from laudanum after long standing, the results of which I hope to submit in a subsequent number of this Journal.

ART. VI. *Account of a Malformation of the Human Heart.* By J. MAURAN, M. D. of Providence, R. I. Communicated for this Journal.

ENCLOSED you will receive three drawings, with a description of an exceedingly interesting malformation of the *human* heart, taken from a female child *ten months and a half old.*[*] If worthy of notice, should be pleased to have them receive an insertion in your useful and extensively circulated Journal.

On the 19th of March, 1827, was requested through the parent, Mr. A—— B——, to examine, post mortem, the case of his child, who had died under peculiar and inexplicable circumstances, the history of which was as follows. The labour was natural; the child, though small, appeared well and healthy; the respiratory apparatus responded readily to its natural stimulus, and thus continued while the child remained in a quiescent state, but from the change of position in washing, dressing, &c. it was noticed to be peculiarly affected. *Cries* were at first uttered, attended with a difficult and almost totally suspended respiration, immediately succeeded by a livid or purple appearance extending over the whole surface even to its extreme terminations, the recovery from which was gradual, perfect rest having been previously restored. Violent motion, (too common with the inexperienced in nursing,) would, however, reproduce the same phenomena, which were only counteracted by restoring the child to a quiescent state. These symptoms occurred occasionally, when great care was not observed. Ten days after birth I was called to revisit my young patient, who was labouring under a supposed inflammation of the lungs, attended with a difficult and apparently painful respiration, slight cough, with slight fever, and a disposition to general spasm. These appearances were at first *wholly* attributed to imprudent exposure, the eyes being at the time much inflamed. I learned from the nurse, that the paroxysm would recur at irregular intervals, commencing with a convulsive or spasmodic action of the whole chest, and, (to use the expression of the mother,) a *catching* respiration with *sobbing*, would continue for many minutes, when the patient would apparently cease to breathe, the whole surface to the extremities putting on the above described livid or purple hue—in fact, exhibiting the perfect "puer cœruleus."

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[*] The original preparation remains in my cabinet.

By inclining the child forward upon the nurse's lap, thereby affording a pressure upon the *chest* and abdomen, a slow return of the functions of respiration was noticed, the livid hue at the same time yielding to the improved circulation, its ordinary healthy aspect was gradually restored to the surface. The primæ viæ were directed to be moderately evacuated, slight pectorals, with antispasmodics, prescribed, and *perfect rest strictly enjoined.* The cough and fever soon abated, but the above described appearances continued occasionally to recur throughout the remainder of its wretched existence, particularly when nauseating medicines were attempted to be administered. It nursed, however, with tolerable ease. In consequence of its repeated attacks, it was finally removed to the country, where it became the *standing patient* of most of the *goodly matrons* of the neighbourhood, who through their constant, and *kindly* attentions, permitted our little sufferer the enjoyment of but limited intervals of quietude and repose, its proper, and probably *only* security. One of these kind attendants, who had taken charge of the child, declared to me "that it could be no common complaint, or *she should have cured* it, for she had given it all the *roots* and *yarbs* that could be thought of." As we should anticipate, it died in one of the paroxysms we have mentioned.

The dissection fifteen hours after death, discovered the following interesting appearances. The child was small, and exceedingly emaciated—surface yet livid—abdominal viscera perfect. On removing the thoracic parietes, the lungs were found extraordinarily collapsed, and exhibiting a comparatively light colour. The pericardium being opened, discovered the *heart* of the exact form, size, and inclination, represented in Plates I. and II. with its enormously enlarged auricle on the left, completely distended with dark fluid blood. This being evidently the source of the preceding distress, was removed, in connexion with the lungs and contiguous vessels, for more minute investigation. I at first determined to inject it, but for the purpose of previous experiment, secured the orifices of the aorta, together with the pulmonary branches and their accompanying veins, and the cava descendens. A blow-pipe was now introduced into the cava ascendens, through which, to our astonishment, we could inflate the whole viscus, (auricle, ventricle, and coronary arteries.) This singular phenomenon determined me to exhibit its *interior*, it being difficult, *a priori*, to conceive from an *external* view, how a sufficient decarbonization of the blood was effected, to sustain the functions of animal life for so long a period, (ten and a half months,) as before mentioned. The heart was accordingly divided through the ventricle, vertically from its apex, to the origin of the aorta, (as exhibited in Plate I. fig. 2,) and discovered the following *unique* appearance. It was in fact a *single heart!* having but *one auricle* and *one ventricle!* communicating by a large and free foramen, the borders of which gave origin to a tricuspid valve. The ventricle, anteriorly, as observed in situ, exhibited a triangle with a slight inclination of its base upwards towards the left side, and giving rise at its superior angle to the aorta, the division and distribution of which was as usual, except that the left subclavian arose posteriorly to the other vessels at the arch. In Plate I. fig. 1, and Plate II. the cut end of the aorta descendens is drawn upwards and outwards, to expose more perfectly the next vessel to be described.

I would here observe, however, that the origin of the coronary arteries was as usual. The pulmonary artery exhibited the most interesting feature of the general malformation, arising almost in immediate connexion with the aorta on its left side, from one common ventricle, it passed backwards, giving out its accustomed branches, and thence becoming ductus arteriosus, was found *pervious* and opening into aorta descendens. From the fact of the *pervious* state of this duct at its aortal termination, a more minute investigation was instituted, which exhibited it perfectly *impervious* at its origin from the ventricle, between which and the bifurcation was a perfect "cul de sac." The auricle was next observed attached to the ventricle *extensively*, and on its left side; its size, when dilated, being more than two-thirds that of the ventricle, and exhibiting anteriorly two auricular appendages, (as in Plate I. fig. 1.) whose parietes were thin and capable of perfect distention. Into this bag-like appendage *posteriorly*, were inserted the two cavas and *right* pulmonary vein, (there being only *two*,) the *left* having an insertion *anteriorly*, near the origin of the pulmonary artery. A vertical section of the ventricle, (Plate I. fig. 1.) exhibits its parietes unusually thick and strong, being largely studded with columnæ carneæ, the valve between this and the auricle was *tricuspid*. Our next step was to inquire how a sufficiency of blood could have been decarbonized to sustain the functions of animal life. Were it not for the fact of previous existence, we should, *a priori*, have unhesitatingly declared that life could not be protracted to the period of time above mentioned, with a heart and vessels thus malformed. But we find nature ever fruitful in resources, partially supplying, in this case, the deficiency of the double ventricle, by the following process:

The blood having arrived at the ventricle was propelled through the aorta in the usual manner, but instead of a *direct* communication with the lungs, through the pulmonary artery, (that being completely impervious,) the lesser circulation was effected *indirectly*, by a retrograde current through the providentially *pervious* ductus arteriosus, thence through the pulmonary branches, to be returned by their accompanying veins to the auricle, the common receptacle of this, and the black blood of the cavæ.

The above dissection discloses a very curious malformation, and at the same time presents to the physiological inquirer an exceedingly interesting fact, from the comparatively small quantity of oxidated blood that was found equivalent to sustain the animal functions; it being, (see plates,) less than one-fourth of the whole circulating medium.

Explanation of the Plates.

Pl. 1. fig. I. *a*, The ventricle, triangular, with its inclined base, and coronary arteries, of the exact form, size, and inclination, as observed in situ.

b, Aorta descendens, drawn upwards an wards.
c, Pulmonary artery, impervious at its origin.
d, Its cul de sac.
e e, Pulmonary branches.
f, Ductus arteriosus, pervious, and opening into aorta descendens.
g, Auricle, enlarged, exhibiting anteriorly its two appendages, *h h*.
i, Left pulmonary vein, inserted anteriorly.
k, Right pulmonary vein, inserted posteriorly.
l, Ascending cava.

Pl. I. fig. 2. *a a a*, Vertical section through the ventricle from its apex to the origin of the aorta.
b b b, Aortal cavity with its semilunar valves perfect.
c c c, Cavity of the ventricle.
d d d, Bicuspid valve.
e, Opening or communication with the auricle.

Pl. II. *a*, Ventricle and coronary arteries.
b, Aorta; *l*, left subclavian artery arising from it posteriorly.
c, Pulmonary artery.
d, *d*, Pulmonary branches.
e, Ductus arteriosus, pervious and opening into aorta descendens.
f, Auricle, enlarged.
g, Cava ascendens.
h, Cava descendens.
i, Right pulmonary vein.
k, Left pulmonary vein, inserted into the auricle anteriorly.

The preceding case of malformation of the heart, which you have kindly submitted to me, is one of the most interesting I have met with, and is a very valuable contribution to science. It illustrates strongly the soundness of the principle now commonly adopted by anatomists, that the congenital deviations from normal structure in the human being, are a sort of effort at return, or an approximation to the type of the inferior animals. It is clear that this heart has very much the same mechanism as that of an animal breathing by gills, where only two cavities are required, one as a recipient of blood, and the other as a propeller; its shape, in fact, resembles strongly that of the shark.

In the development of the human heart, it is sufficiently known that till the second month it consists of but two cavities, a right auricle and a left ventricle. At the period mentioned, a partition begins to rise up, which finally divides each of these cavities so as to form two distinct auricles and two distinct ventricles. The foramen ovale is the last vestige of the two auricles having ever formed a common chamber. The aorta and the pulmonary artery are also primarily a common canal. Now the inference is, that when in the embryo heart any arrangement occurs in the collocation of its parts, tending to affect the harmony of its extra-uterine operations, in such case the whole organ will show its sympathy by an evolution differing from what is common. For example, this heart has the right pulmonary vein discharging into the right auricle on the right of the descending cava; the whole heart has felt the incompatibility of this location; the growth of the auricular and ventricular partition has been arrested, and the whole organ has been modelled according to the necessity thus imposed, or in other words, the best has been made of a bad matter. Suppose that the heart had been perfect as in an adult, excepting one-half of the pulmonary blood returning into the right auricle, it is evident that the equilibrium between the pulmonary and the general circulation could not have been maintained, and that the individual must have died a few moments after birth. But by opening a sort of regulating sluice, or as in this case by arresting the growth of certain barriers between the two circulations, an arrangement is made consistent with life.

This principle is also strongly manifested in my account of the dissection of a double male fœtus, in the North American Medical and Surgical Journal, for October, 1827.

W. E. HORNER.

To Dr. HAYS.

ART. VII. *Some Experiments on the remote cause of the appearance termed a Corpus Luteum.* By J. K. MITCHELL, M. D. &c.

IMMEDIATELY after a successful coitus, one or more of the superficial vesicles of the ovary begin to enlarge, become opaque and reddish; and, finally, the peritoneal covering is removed, and something escapes from the vesicle. The place from which the fecundated matter makes its exit, acquires an indented appearance and yellow colour, and has, therefore, obtained the name of *corpus luteum.* It is a yellowish cicatrix. As the female grows in years, the cicatrix becomes smoother and smoother, and its colour more faint, until, at length, an almost invisible speck alone marks the point from which the germ had issued.*

Almost all physiologists agree in the opinion that the *corpus luteum* is a never-failing consequence of conception. But they are by no means united in the belief that it can be produced solely by conception. HALLER and his followers, among whom may be ranked CRUICKSHANK and HAIGHTON, affirm that yellow cicatrices never appear in the ovaries of virgins, or even of those females who have enjoyed an unproductive intercourse. Haller searched in vain for them before impregnation, and even during the period of incalescence. According to Cruickshank, the calix of the rabbit becomes, during heat, and without impregnation, as black as ink, and at last pouts and projects like a nipple, but never bursts so as to form a cicatrix. To this negative testimony, highly respectable as it is, we find opposed the direct and positive evidence of a host of able and acute physiologists. BUFFON, BERTRANDI, VALISNIERI, and others, have seen yellow cicatrices on the ovaries of virgins. According to BLUMENBACH, solitary pleasures and sterile intercourse, have given rise to the *corpus luteum.* BRUGNONI has collected a great body of facts in favour of the same opinion. CUVIER, who is himself a host, adopts the same sentiment. Although he never discovered *corpora lutea* in virgin quadrupeds, he saw them in a female who had not borne children, and whose hymen, at twenty-seven, remained entire—"*dans toute son integrité.*"

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* It is not necessary to notice in this place, the new signification which Mr. Home has given to the term *corpus luteum.*

Mr. Blundell, the relative and successor of Mr. Haighton, after making a number of curious experiments, reached a like conclusion. He took female rabbits before puberty, and by various means, obstructed some part of the genital canals. Notwithstanding the mutilation, these rabbits recovered, and, at the usual period, became incalescent, and received the male. In none of these cases could ova or fœtuses be found; but in nearly all of them, the ovaries were excited, the vesicles enlarged, their fluids increased in quantity, the peritoneal covering was removed, the vesicular contents escaped, and well-formed *corpora lutea* were afterwards discovered. Blundell agrees with Mr. Haighton in the belief that after the longest incalescence, *without masculine intercourse*, no *corpora lutea* are to be found. In his museum, Mr. Blundell exhibits the ovaries of a girl of seventeen, with four *corpora lutea*, although the hymen closed *nearly entirely* the vagina. In the "New System of Physiology" by Mr. Saumarez, are found recorded many experiments on the same side of the question.

As the question is one of some importance to legal medicine, and as the authorities on each side are very imposing, I thought it of consequence, to repeat, in order to verify or refute the experiments of Blundell, which have the most direct bearing on the point at issue.

Accordingly, in the summer of 1822, I obtained a number of female rabbits of a very young brood, on which I made, with the assistance of a medical friend, the following experiments:—

Experiment 1st.—A small portion of each fallopian tube was *cut out*, and the parts restored to their natural position, and an appropriate mark made in the ear.

This animal would not receive the male, and was killed and examined in April, 1823, when no *corpora lutea* were discoverable. The ovaria appeared small, and without vesicles.

Experiment 2nd.—An incision was made through the left uterus, and the parts were left *in situ*. Incalescence followed, the male was received, and the rabbit died on the 27th March, 1823. The uterus was empty, and its cut extremities were found re-united, and in the *other* uterus was discovered a number of fœtuses. Corpora lutea were visible on both ovaria.

Experiment 3rd.—We cut the vagina near to the uterus transversely, and after drawing by means of a thread the lower section of the vagina out of the line of its usual axis, closed the external wound by means of the same ligature.

In the beginning of 1823, the subject of this experiment became incalescent, and suffered such a gradual enlargement, as is usual during the period of utero-gestation. On the 9th of April she began her preparation for parturition, by pulling off her hair, and making, with it, a soft couch for the reception of her young. For two days after, she appeared to be in labour; and exhibited great uneasiness at the unusual delay in a process commonly so short as parturition in rabbits. At length, in the presence of Drs. Harlan, Meigs, and Darrach, the animal was killed and examined. The cut extremities of the vagina presented complete culs de sac; that of the lower portion had formed adhesions to the fundus of the bladder. The two uteri were developed to nearly the same degree, as at the end of utero-gestation, and were filled with a transparent liquid, without any appearance of germs or fœtuses. Several large vesicles were conspicuous on the left ovary, and, in both glands, could be seen *corpora lutea*. According to the mode of judging of impregnation, usually adopted, we should have had full testimony of it in this case, if our observations had been confined to the uterus and ovaries. There were a fully developed uterus and ovarian cicatrices—appearances, which, according to Littre, entitle us to pronounce confidently as to pre-existent impregnation.

Experiment 4th.—The rabbit, in this case, treated as in the third experiment, afterwards received the male, and died in April, 1823. The uteri were large, and, with the vaginal sac, were full of water. The ovaries were of the usual size, and contained a number of well marked vesicles. I think that *corpora lutea* appeared in this case also; but from the tattered state of my memoranda, I cannot feel certain of it.

Experiment 5th.—The experiment was, in this case, conducted, as in the first instance cited; that is, nearly an inch was cut out from the fallopian tubes, and the external wound carefully closed by stitches. In the following spring, that of 1823, the rabbit used in this experiment died, after refusing the male. The ovaries were small, the uteri imperfectly developed, and the cavity of the abdomen contained a number of hydatids.

It is not a little remarkable, that in both the cases in which a portion of the fallopian tubes was removed, the uteri and ovaries should have received but a partial development; while in those cases where the vagina, or even the uteri were treated in a similar manner, these organs should have attained their usual size and appearance.

Several other experiments were made, all tending to confirm the testimony of Mr. Blundell. From the view taken of the whole subject, it seems probable, that corpora lutea, or in other words, yellow cicatrices, do not appear in the ovaries of subjects which have had no intercourse with the male, but that they are not good evidence of impregnation, or at least of conception. Although cicatrices were found in several females with imperforate hymen, we have no proof of their virginity, and indeed, judging by analogy, should esteem the *corpora lutea* a proof of former intercourse. When such men as Cuvier, Cruickshank, Haighton, Blundell, and others, fail to discover these cicatrices in virgin quadrupeds, we should be wary of admitting the possibility of their appearance in *any* virgin. At the same time, let it be remembered, that, in coming to this conclusion, we have the light solely of analogy, a light which displays the truth, often imperfectly, and sometimes with false colours. What has fallen from Blumenbach, respecting the effect of solitary indulgence, should have its weight in forming an opinion on this question, in reference to the *human* subject. But, after all, human testimony, where concealment is so common, must be always of dubious import; and, feeble as is the light from analogy, it is perhaps safest, in a question, such as is now before us, to trust to its guidance.

According to analogy, it appears, that *corpora lutea* are always evidence of sexual intercourse, but can never be received as a proof of conception. According to trustless human testimony, always doubtful on such a subject, *corpora lutea*, may appear in females of our own species, without either conception, or sexual indulgence.

Art. VIII. *On the Functions of the Lymphatics.* By E. Geddings, M. D. of Charleston, S. C.

Prone, as we are, to be charmed by the allurements of hypothesis, and pleased with the fascinations of novelty, we are too often led into the grossest inconsistencies, merely from a disposition, unfortunately, too prevalent, of hastily adopting whatever is set forth with plausible ingenuity. From this source, have originated most of those errors, which have from time to time, sprang up to mar the purity of science, retard its advancement, and incur for it the opprobrious appellation of instability and uncertainty. To arrive at truth, we must fortify ourselves against the imposing blandishments of error, and close our ears against the soft whispers of winning credulity. It was, indeed, with much truth, that Socrates asserted, that the surest entry of the temple of wisdom, is through the portals of doubt; and had the votaries of science attended to the importance of this maxim, and evinced a little more scepticism in their inquiries; their success would have been more brilliant, their achievements more glorious, and the benefits to the world of a more extensive character. No where, perhaps, has the truth of this precept been more amply displayed, than in reference to the subjects, which are about to engage our attention, the use of the lymphatics, and the function of absorption in general.

From the period of the discovery of the lymphatics, to the time of Dr. W. Hunter, these vessels were, for the most part, regarded as constituting an essential part of the circulatory apparatus, destined to convey the thinner part of the blood. Dr. Hunter, discarding this hypothesis, maintained that the exclusive office of the lymphatics is to perform the function of absorption. This opinion, perhaps, obtained more general assent than any which has ever yet been advanced, in reference to these important vessels. At the very time, however, when it was about to be universally adopted, Majendie nearly succeeded in giving it a death blow, by reviving the ancient doctrine of venous absorption, which had been so ably combatted by Hunter and Monro. From the great ingenuity and imposing results of the experiments, upon which this gentleman predicated his conclusions, his hypothesis was adopted with avidity, and the nearly established doctrine of lymphatic absorption, rejected as untenable. Fortunately, however, there were a few who buckled on the armour of scepticism, and setting this new dogma at defiance, stood forth the valorous champions of the doctrines of Hunter and Monro. Their success has been highly flattering: and to set forth some new anatomical discoveries, to which the inquiries excited by this contest has given rise; to deduce from these some inferences, which will go to place the functions of the lymphatics, and the character of the lymph in a new aspect, will constitute the principal objects of this communication.

In the first place, to determine correctly what is the true office of the lymphatic vessels, it will be necessary to examine into the nature of their arrangement and connections. On these points an endless variety of errors and absurdities have prevailed. Those anatomists who affirmed that the veins performed the office of absorption, and that the lymphatics were merely subservient to the circulation of the serum of the blood, have, as we shall presently see, been too hasty in drawing their inferences. If the veins absorb, and the lymphatics merely carry the thinner parts of the blood, the former should have no direct communication with the arteries, while in the latter the continuity with the arterial capillaries should be perfect. Precisely the reverse is true in both cases—the veins are continuous with the arteries, while the lymphatics take their origin independent of these vessels. The former of these assertions can require no proof, inasmuch as its correctness is almost daily manifested by the facility with which minute injection passes from the arteries into the veins. In reference to the latter point, however, it is proper I should make a few observations, since authorities are not wanting, who believe in the immediate connection between the arterial capillaries and the lymphatics. The advocates of this opinion found their opinion upon the occasional passage of minute injection from the arteries into the radicles of the lymphatics. Experience, however, has shown, that this never takes place without a simultaneous laceration of the parts, and an infiltration of the injection into the surrounding tissue.* This fact has been so clearly demonstrated, that at present there is not, I believe, a single anatomist of celebrity, who advocates the continuity of these vessels. On the contrary, all the best anatomists of the present day, either express strong doubts on the subject, or deny it in toto. Beclard* asserts that "where minute injection passes from the arteries into the lymphatics, it is by its transudation into the cellular tissue, and its entry from this into the mouths of the vessels." Meckel, who is the latest and decidedly the best authority on anatomy, asserts that "where this phenomenon takes place, it is in consequence of a laceration, or transudation," the latter of which is a property, which has been shown by Fodere, to appertain in a high degree to all the tissues of the body. Haller and Mascagni also denied the continuity of the lymphatics with the arteries. The latter, however, was aware that some lymphatics took their origin from the cavity of the arteries, which fact has been recently confirmed by Lauth, Jr. of Strasburgh.† This circumstance, while it will serve to explain the occasional passage of injection from the arteries into the lymphatics, instead of militating against the absorbent faculty of the lymphatics, on the contrary, affords a strong argument in its favour.

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* Meckel, Manuel d'Anatomie, Tome I.

If, therefore, the lymphatics are not continuous with the arteries, we shall be warranted in rejecting, at the same time, the opinion of Rudbeck and Bartholin, that the lymphatics are destined to circulate the serum of the blood; and the hypothesis of Magendie that these vessels do not absorb.

But having refuted one of the arguments which has been supposed to prove that the lymphatics do not perform the office of absorbents, it yet remains for one to consider those arguments, by which it is proved that they do possess this property.

Adhering to the plan adopted in the preceding argument, I shall advance nothing that is not reconcilable with the anatomical arrangement. Having pointed out the incompatibility of this, with the office imputed to the lymphatics, by Bartholin and others, I shall now endeavour to prove that the origin of these vessels is such, as to be favourable, in the highest degree, to the office of absorption.

The origin of these vessels is different, in different parts of the body. It is, however, every where such as to admit of the ready ingress of the fluids, which it is their peculiar province to absorb.

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* Anatomie Generale.

† Essai sur les vaiss. lymph. 1824.

Their radicles not only commence from the substance of the tissues, and on the secreting and exhalent surfaces, but we have already seen that they even open on the internal face of the arteries. I am aware that it has been heretofore denied, that the lymphatics open on the surface of the skin, but the triumphs of modern anatomy have here succeeded in dispelling an error, which has, for a whole century, obscured this part of physiology. Sœmmerring, sometime since, asserted that when the lymphatics were injected with quicksilver, this metal could, by moderate pressure, be forced out upon the surface of the skin. This fact was, however, deemed inconclusive, since it was supposed that it only took place from a laceration of the parts. At present, however, these vessels, so long sought for, and indirectly demonstrated by Sœmmerring, have been fairly and satisfactorily injected by Lauth, Jr. This gentleman has recently succeeded in filling the cutaneous lymphatics with quicksilver, even to their termination on the external surface of the skin. The absorption by the surface, can therefore be no longer controverted, and considered as an opinion in which it would be *heresy* to believe. It is, indeed, as well established as any fact in physiology; and this discovery of Mr. Lauth, will serve to explain a number of physiological and pathological phenomena, which have hitherto been regarded as altogether inexplicable.

There are a variety of arguments which might be brought forward to prove that the origin of the lymphatics is such as we have described, and which, at the same time, clearly establish the absorbent powers of these vessels. One of these is the fact, that the lymphatics are always found filled with a fluid, participating of the properties of the parts from whence they take their origin. I am aware that some distinguished physiologists have maintained the converse of the proposition, that the fluid contained in the lymphatics is perfectly homogeneous. But their observations have been confined to the thoracic duct, the fluid of which differs widely from that which exists in the lymphatic vessels, previous to their passage through a lymphatic gland. Inferences drawn from this source cannot, therefore, be regarded as conclusive, as I shall presently show more satisfactorily. We are moreover disposed to deny the correctness of the assumption, from the fact, of an opposite condition having been repeatedly observed by persons of the highest respectability.

MASCAGNI informs us that he has seen the lymphatics of the thorax and abdomen disturbed with a bloody serum, that had been effused into these cavities; those of the abdomen filled with a whitish fluid, after a rupture of the duodenum: those of the abdomen and thorax, inflated with gas, in the body of a man, who had died, emphysematous, from poison; those of the liver, and other parts of the body, rendered yellow by the absorption of bile in an icteric patient. DUPUYTREN saw the lymphatics of a thigh, which he amputated, at Hotel Dieu, for a scrofulous affection, distended with pus. These facts are confirmed, if indeed they require confirmation, by the observations of the celebrated MECKEL. He declares, that the lymphatics coming from the liver, carry a fluid resembling bile: those from the mammæ, a milky fluid: those from parts in which blood is effused, a bloody fluid. The bronchial glands and lymphatics are of a black colour, resembling the dark colour of the lungs; and those situated in the vicinity of the spleen, have the same colour as that organ. Poisonous substances, as the small-pox, and venereal virus, inflame the lymphatic vessels and glands through which they pass, &c.* The lymphatic glands have, moreover, been found tinged with madder, in those animals that have been fed on this substance. These facts not only prove that the lymphatics are independent of the arteries, but at the same time establish their absorbent faculty. Should any further arguments be considered necessary, they will be formed in the promptitude with which prussiate of potash, and some other substances, when thrown into the cellular tissue, or any of the great cavities, are absorbed, and carried into the thoracic duct, where their presence may be detected by proper tests. It is needless that I should say any thing of cutaneous and pulmonary absorption. The introduction of certain substances by the skin and lungs, is now too well established to require any proof. We shall, therefore, proceed to examine the general arrangement, and termination of the lymphatic vessels, and deduce from thence some conclusions and observations, which will go to prove that these vessels are instrumental in the performance of a function, which, so far as I know, has never before been attributed to them.

Not the least important part of the lymphatic system, is the glands. Every lymphatic vessel, however small, traverses one or more of these glands, so that from the constancy of this disposition, we are compelled to regard these bodies as performing some essential part in the economy of this system of vessels. Of this, however, we shall have occasion to speak more fully, after we have considered the termination of the lymphatic vessels.

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* Meckel, Manual d'Anatomie, Tome I.

Hitherto the whole of these vessels have been supposed to terminate in the thoracic duct, and the right subclavian vein. Recent anatomical discoveries, however, have tended to correct this error, by developing the important truth, that many of the lymphatics terminate directly in the veins of different parts of the body. The connection of these vessels with the radicles of the venæ portæ was long since noticed by Meckel, grandfather, Wallerius, Lobstein, and others, who supposed that a part of the chyle passed through these vessels into the veins. Mertrued proved by experiment, that fluids could be passed from the lacteals into the vena azygos, and the lumbar veins. These experiments did not, however, obtain much confidence, and, indeed, were nearly forgotten, when Fohmann, a German anatomist, confirmed in 1821, the existence of this connexion. The subject was taken up by Lauth in 1824, the result of whose labours correspond with those of Fohmann. Within a short time, experiments have been instituted by Dr. Lippi,* of Italy, which have not only confirmed the statements of his predecessors, but eventuated in the discovery of several large lymphatic trunks terminating in the vena cava, in the middle of the abdomen. These discoveries have excited a considerable share of interest; and even while writing this, I have received an account of other experiments made by Dr. Rossi,† of Parma, which are highly satisfactory on this subject. Dr. Rossi's attention was called to the subject, by reading the account of Lippi's discoveries, and the result of his labours is a complete confirmation of the correctness of the statements made by his countryman, with the exception that Rossi thinks these vessels differ from true lymphatics. In the first experiment of this gentleman, the mercurial injecting pipe being introduced into the vasa efferentia of one of the inguinal glands, the quicksilver passed through the external and primitive iliac, and the inferior lumbar glands, forming a beautiful plexus, after which it reached the superior lumbar glands. From these latter, the lymphatics proceeded, which give origin to the receptaculum chyli. But besides these, there were three vessels of considerable magnitude, though not well injected, taking their origin from the gland, which, instead of going to the thoracic duct, terminated, one in the vena cava, immediately above where it passes the liver: the second, in the same vessel, near the termination of the right spermatic vein: and the third, in the commencement of the left emulgent. Dr. Rossi then included these vessels in ligatures, near the point at which they joined the veins, then inserting his pipe in the vasa inferentia of the superior lumbar gland, he readily succeeded in filling all three with quicksilver. In another subject, in which the mesenteric glands were injected, several vessels were seen coming out from one of the largest of these glands, which terminated in those veins which form the vena portæ, particularly the splenic vein. In a third subject, in which the iliac lymphatics were injected, a great number of these vessels emptied themselves into the vena cava, and the radicles of the vena portæ. The same results were furnished by several other experiments, so that the free communication between the lymphatics and veins, besides those which take place through the thoracic duct and right subclavian vein may be fairly regarded as established.

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* *Antologia di Firenze.*

† *Annalli Universali.*

The lymphatics may be said to terminate in the veins in four different ways, viz. 1. Where they communicate by small radicles in the substance of the organs. 2. Where a similar termination takes place in the veins, within the substance of the lymphatic glands. 3. Where they terminate by considerable trunks in the larger veins, and 4. Where this communication takes place in the thoracic duct and the right subclavian vein.

These facts are of the highest importance, since they enable us to explain many circumstances, which have, heretofore, been misunderstood; particularly the rapid appearance of certain substances, as poisons, &c. in the venous circulation. Modern physiologists have endeavoured to account for this phenomenon on the gratuitous assumption of the absorbent powers of the veins; I say gratuitous, since, I conceive, that all the arguments which have been advanced to prove that the veins perform this office, have been satisfactorily refuted by the discoveries detailed above. Even admitting that the veins possess, to a certain extent, an absorbing faculty, this must be extremely limited, since, from their continuity with the arteries, the fluids to be absorbed could only enter them by inhibition, a process altogether too limited and tardy to account for the rapid absorption of many substances.

It has been inferred that the lymphatics could not be the instruments of absorption, since the sum of their radicles and branches greatly exceeds that of their trunks. But this objection, we now perceive, is not well founded, inasmuch as only a portion of these vessels terminate in the thoracic duct, the others ending directly in the veins. Arguments have also been drawn from comparative anatomy, to prove the absorbent faculty of the veins. With this view, it has been asserted that there are many animals which have no lymphatic vessels. This has been said to be the case with the birds, the reptiles, and the fish. This assumption, although coming from such high authority as Magendie, is absolutely incorrect. It is now clearly established that all the vertebrated animals have lymphatics;* and that it is only the moluscæ that are deprived of them; some of which, indeed, are equally destitute of sanguineous vessels.† It has, moreover, been asserted, that the veins must absorb, since many parts of the body, as the placenta, the eye, the brain, &c. have no lymphatic vessels. It is probable, however, that all these parts have lymphatic vessels, though it has been difficult to demonstrate them. As regards the eye, the question is determined, Mascagni having even succeeded in tracing one of these vessels to a gland; and SHEREGER saw lymphatic vessels on the conjunctiva of a patient affected with an ophthalmia.‡ Mascagni also discovered some vessels in the placenta possessing all the characters of lymphatics, which, however, he was unable to inject. The existence of these vessels in the placenta has been, moreover, rendered almost certain, by the researches of MICHAELIS and UTTINI. Inferences, therefore, drawn from these data, can no longer be considered as valid.

Having proved that the proper office of the lymphatics is absorption, and that it is extremely doubtful if the veins perform this function, it yet remains to determine if they are merely subservient to this function, or whether they do not fulfil some other important purpose in the animal economy.

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* Cuvier, Anatomie Comparé, tome 4.

† Ibid.

‡ Beytrage Erster Riel, scit. 244.

There are several circumstances which would go to prove that simple absorption constitutes but a small portion of the function of the lymphatics. But physiologists do not agree with regard to the nature of these offices. I have already stated, that Bartholin and Rudbeck supposed that their province was to circulate the serum of the blood. Since their time a variety of conjectures have been advanced on this question, all of which appear to me to be unsatisfactory. Nearly all have admitted that they are more or less instrumental in the function of assimilation, but no one has pointed out satisfactorily in what manner they subserve this purpose. TIEDEMANN and GMELIN, speaking of this subject, assert, "that those substances which are conveyed into the sanguiferous system through the thoracic duct, as chyle, are mixed in their passage through the mesenteric glands and the thoracic duct, with a reddish coagulating fluid, secreted from the arterial blood in these glands, and in the spleen, which assimilates the chyle to the nature of blood;" and, "that the substances taken up by the absorbents are mixed, to promote assimilation with a fluid secreted by the arterial blood, in the lymphatic glands, renal glands, and thyroid gland, in the same manner as the chyle receives a fluid secreted in the mesenteric glands and in the spleen."[*] Some have supposed that the lymph was elaborated by the lymphatic glands; while others, as Messrs. CHAUSSIER and ADELON,[†] have referred this function to the orifices and radicles of the lymphatic vessels. But the most ingenious opinion I have met with, is that advanced by BROUSSAIS. After speaking of the assimilating power of the lymphatic glands, he goes on to say, that, "if the necessity, or even utility, of this elaboration be admitted, we can conceive that the fluids imbibed by the different surfaces should be divided into two kinds; the one will be admitted directly by the radicles of the veins; the other will be attracted towards the great lymphatic apparatus, and will have to traverse it, before mixing with the blood."[‡] This hypothesis, though highly ingenious, is defective in several respects. In the first place, though I would admit with him that the substances absorbed are of two kinds, I would by no means agree with him in his division of these substances; nor would I admit that he is right in saying that one of these fluids enters directly by the radicles of the veins. It is, moreover, defective in another respect. Supposing the fluids to be more or less blended, this hypothesis does not explain to us by what means they are separated, and what determines the one to enter the radicles of the veins, and the other to traverse the lymphatic apparatus.

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[*] Die Verdauung nach Versuchen, &c.

[†] Dict. des Sciences Medicales.

[‡] Physiology.

Dissatisfied with all these conjectures, I shall offer one which appears to me much more plausible. I do not, however, offer it as a mere conjecture; on the contrary, I think, by a proper consideration of the different phenomena connected with absorption, such inferences may be legitimately drawn as will go far to establish the correctness of my propositions.

Turning our attention to the lymph, we shall find it of variable character, according to the nature of the substances, which are submitted to the action of the absorbent vessels. It is, indeed, correctly speaking, a heterogeneous fluid, made up of diversified particles, or mollicules, which are derived from the fluids assimilated by the process of digestion; those which are imbibed by the gastric and pulmonary mucous, and the cutaneous surfaces; those poured out by the serous, synovial, and other exhalent surfaces; the fluids deposited in the cellular and adipose tissue; certain substances accidentally introduced, or generated by disease in the substance of the tissues; and finally, the proper mollicules of the tissues or organs, removed, by what Mr. Hunter denominated interstitial absorption.

But if the lymphatics take up, as it were, indiscriminately, every substance submitted to their influence, it might be asked why it is that the contents of the thoracic duct are uniformly the same, seldom or never presenting any substance foreign to the nutrient particles, which are destined for the growth and sustenance of the system. In vain have poisons, colouring substances, &c. which have been submitted to the action of the absorbents, been sought for in the contents of the thoracic duct. The most elaborate research, and the most exquisite tests, have not been sufficient, with a few exceptions, to detect them. How then are we to explain this apparent inconsistency? How shall we account for the disappearance of those heterogeneous particles which are pumped up from the different parts of the body, and the conversion of the lymph, consisting of such a diversity of substances, into a fluid, perfectly simple, uniform, and homogeneous? Physiologists, bewildered by the difficulty of an explanation, have asserted that the lacteals are a distinct set of vessels, destined exclusively for the absorption of the chyle, rejecting with the most scrupulous nicety all substances foreign to the nature of this fluid. But the lacteals do not present any peculiarity either of structure or function, which would distinguish them from the general lymphatic system, of which they merely form a part. These physiologists appear to have forgotten that the other lymphatics are incessantly pouring their contents into the thoracic duct, and that even admitting the lacteals to perform this nice discriminating office, the object for which they supposed it to be instituted would be destroyed, since the homogeneous character of the chyle would be altered by mingling with the lymph in the thoracic duct. This circumstance has also been supposed to afford a strong argument in behalf of venous absorption, it having been assumed that the lacteals alone possess an absorbent faculty, while the other lymphatics were subservient to some other office. But this hypothesis is even less satisfactory than the others, and is grounded on an assumption which is altogether untenable.

If then the lymph is of a heterogeneous character when pumped up by the lymphatics, and is homogeneous in the thoracic duct, we must seek for some point, some apparatus, by which the nutrient is separated from the innutrient particles, or the whole converted into the simple, bland, homogeneous fluid, which is found in the thoracic duct.

We may, notwithstanding the variety of substances of which the lymph is composed, divide it into two kinds, according as it consists of nutrient or recrementitious matter. It appears to be a constant law of the animal economy, that the parts or mollicules of which the different tissues are composed, are destined to undergo a constant and regular series of changes, consisting in their alternate deposition by the nutritive vessels, and their removal by the absorbents. Each particle, though not deprived of its nutritive properties, can only remain stationary for a limited time, in the substance of the tissues. It is taken up by the absorbents, and after being again elaborated, during its passage to the thoracic duct, it is returned into the tide of the venous circulation, to contribute, a second time, to the growth and sustenance of the body. These changes may go on without producing any variation, either in the form or volume of the organ; other particles being constantly deposited, to occupy the place of those which have been removed.

But there appears to be another modification of this absorption, by which the volume of the parts is either increased or diminished. This appears to result from a wise provision instituted by nature to protect her creatures against decay, during intervals of long abstinence, or at those times, when, in consequence of disease, the digestive apparatus is disqualified for the elaboration of the usual quantity of chyle. There are many parts, which, in the healthy state of the system, appear to form general depositories of nutritious matter, which is bountifully stored up by nature, to guard against the calls of distress. It is probable that the adeps, which is sometimes so abundant in every part of the body, as for example, on the surface, in the substance of the organs, &c. is partly destined to supply sustenance, during those periods when its external resources are cut off. Thus, whenever the quantity of chyle is diminished, those natural store-houses are called into requisition; the nutritive mollicules are taken up by the lymphatics, to be again thrown into the current of the circulation, to support the declining energies of the system. It is most probably from this cause, that the adeps, at certain times so abundant in certain parts of the body, as the omentum, &c. disappears at others, giving rise to more or less emaciation.

These are the sources of the first species, or nutritive lymph. But I have stated that this fluid was of two kinds, the one nutritious, the other made up of the recrementitious part of the natural solids and fluids, as well as those substances either introduced into the system accidentally, or developed by disease. The body is, indeed, constantly exposed to the casual introduction, or development of substances, which are highly inimical to its well being; and besides these, the constant waste which is going on, must give rise to an infinity of recrementitious particles, which the safety and preservation of the individual requires, should be speedily and effectually eliminated from the body.

It will, however, be seen, that our division of the lymph, as well as our explanation of one of the channels by which one portion of this fluid enters the veins, is essentially different from that proposed by Broussais. He supposes that the more simple substances, as water and other fluids, pass directly into the radicles of the veins, without entering the lymphatic vessels, while the more complicated pass through the lymphatic glands, to be elaborated. We, on the contrary, divide the contents of the lymphatic vessels, accordingly as they are nutritious or recrementitious and foreign; and instead of supposing that one portion enters immediately into the veins, without being submitted to the lymphatics, we maintain that the whole is taken up in a heterogeneous state by these vessels, to be submitted to the elaborating influence of the glands. These bodies, acting upon it, separate the recrementitious matter, which, being taken up by those lymphatics which terminate in the veins, is poured into the tide of the venous circulation. The nutritious particles on the other hand, being more perfectly animalized, by some change which is effected in the substance of the gland, is carried to the thoracic duct, from whence it is again mingled with the blood, to be a second time rendered subservient to the support of the individual.

There are a great variety of arguments which go to prove the validity of this assumption. We have already seen, that the lymph, when first absorbed, is made up of particles as various in their characters, as the different substances submitted to the action of the vessels. If then it be ascertained that this is the character of the lymph in the radicles of these vessels, and that this fluid always presents a homogeneous character in the thoracic duct, it must be admitted that it is elaborated, and undergoes great changes at some point, between the radicles and this great trunk of the lymphatic system. And as the diversified particles which enter into the formation of the lymph as it is first absorbed, can never be detected in the fluid of the thoracic duct, it must be equally manifest that these particles are separated and carried into the veins, through some other route.

These points ascertained, it remains to determine what are the organs by which this elaboration is effected, and by what route the recrementitious part of the lymph is eliminated from the lymphatic system.

We have already had occasion to notice several opinions on one of these questions, and there are a great many others which might be noticed, did we deem them of the slightest consequence. If the office of the lymphatics was restricted to the absorption and elaboration of their contents, it would, perhaps, be altogether unimportant to determine, what are the instruments by which this latter is accomplished. But as I have supposed them to be endowed with other attributes, the separation of the heterogeneous from the nutritive part of the lymph, and the elimination of the former from the system, it becomes highly important to determine the agents of this elaboration; since it is almost certain that it is by the same agents, that the recrementitious and noxious part of this fluid, is separated from the nutritive and salutary.

Every circumstance connected with the anatomical arrangement, as well as the physiological operations of the part, would seem to designate the glands as the instruments of these important changes. The structure and disposition of these bodies is highly favourable to the performance of such an office. We have already seen that every lymphatic vessel passes through one or more of these bodies, at some point between their origin and termination. When these vessels are about to penetrate one of the glands, they divide into a number of branches, which enter separately, and ramify through its substance. In consequence of this arrangement, the lymph is effectually exposed to the eliminating influence of the gland, and placed in the most favourable situation to undergo those changes which take place in this organ. These vessels, in like manner, recommencing as it were from the central parts of the gland, come out from it by several small branches, which unite to form trunks, some of which, as we have seen, discharge their contents into the thoracic duct, while the others terminate at several points in the different veins. This anatomical disposition is highly favourable to the supposition which I have advanced. But there are other arguments, which go far to confirm the correctness of this opinion. The heterogeneous character of the lymph, so strikingly manifest previous to it passage through the glands, is no longer visible after it has been acted upon by them; and this fluid, by its greater coagulability, proves that it has become more perfectly animalized. It has moreover been ascertained, that when colouring substances are submitted to the action of the lymphatics, the lymph as far as the first gland, and even the gland itself, is tinged by the substance absorbed; and that after the fluid has passed the gland, its colouring matter is no longer visible, as is manifest from the fact of our inability to detect such substances in the thoracic duct. Here the colouring matter appears to be separated by the gland, to be conveyed with the recrementitious part of the lymph, through that order of vessels, which we have said pass directly from the glands into the veins. We have frequent examples of the glands being tinged in this manner by the colouring matter of the various substances taken up by the absorbent vessels. Thus, as we have already stated, the lymphatics of the liver are of a yellowish hue; the bronchial glands black, &c; and it has been observed that the glands are coloured with madder in those animals which have been fed on this substance. Another circumstance strikingly in point, is the inflammation of the lymphatics and the enlargement of their glands, produced by the absorption of certain acrid, poisonous, or other substances, as the venereal virus, &c. As this inflammation seldom extends beyond the first gland, it is reasonable to infer that the virus is separated from the lymph at this point, and thrown into the veins.

On the same principle we account for the promptitude with which poisons, and other substances foreign to the animal economy are absorbed and transmitted to the veins, to be incorporated with the venous blood. These substances are at first absorbed in common with the nutritive part of the lymph; and with it are conveyed to the first lymphatic gland through which the vessel passes. Here a highly important change takes place; the poison, or extraneous matter, is separated from the more perfectly animalized and nutritious fluid, and is transmitted by those vessels to which we have so often had occasion to allude, into the venous circulation, while the latter is compelled to pursue the more tedious and circuitous course of the thoracic duct. This affords a very satisfactory explanation of the results of the numerous experiments made by Magendie and others on the subject of absorption. We here have a new and expeditious route by which various substances can find their way into the veins, without referring for an explanation of this phenomenon, to the very improbable doctrine of venous absorption.

In vain will the celebrated experiment of Magendie be marshalled against us. Notwithstanding all communication was here cut off between the leg and the trunk of the animal, with the exception of that which was preserved through the medium of the two currents of blood passing through the quills, we can afford a ready explanation of the action of the poison, without referring it to venous absorption. We are, I think, warranted from what has been already said, in asserting that the poison was taken up by the lymphatics, and after passing the glands, sent by one portion of these vessels into the blood of the vein, which flowing through the quill, transmitted it to the heart of the animal, and destroyed its life. We would apply the same explanation to the celebrated experiment of Legallas, made on a portion of intestine. Instead of these experiments tending to prove that the veins absorb, they afford a much stronger confirmation of the hypothesis which we have advanced.

But it may be asked why there should be any necessity for one portion of the lymph to enter the veins by so many separate and remote points, and the utility of the other portion passing through the thoracic duct, when the whole of this fluid has to be poured into the veins. A little reflection will be sufficient to convince us of the importance of such an arrangement. When we remember what a great diversity of substances are submitted to the action of the absorbents, many of which are highly inimical to the well being of the system, we shall readily be enabled to conceive the necessity and utility of such a disposition. Universal experience has shown, that the sudden introduction of any considerable quantity of even the blandest substances into the veins, when these are of a nature foreign to the economy, is productive of almost instantaneous death. If, therefore, the whole of the lymph were to be thrown into the veins from the thoracic duct, abounding, as it does, with so many injurious properties, and these entering the veins with it in considerable abundance, all the mischievous consequences of the sudden introduction of foreign substances would necessarily ensue. It has on the other hand been equally established, that even acrid substances may be introduced into the veins, to a considerable extent, without producing any very serious consequences, provided this introduction takes place gradually. Reasoning, therefore, from these data, we can readily conceive the importance of the free communication of the lymphatics and veins, and the immense advantages which would be likely to result from the separation of the recrementitious part of the lymph. By this arrangement, the mischievous consequences likely to result from the sudden introduction of those substances which are of a hurtful nature, are effectually guarded against. These substances, instead of entering at one point in the vicinity of the heart itself, are gradually introduced by the different lymphatic vessels, which open in the veins, so that, becoming mingled and diffused with the venous blood, before they arrive at the heart, the injurious consequences which would result under other circumstances are either diminished or effectually obviated.

But there are still some other highly important objects attainable by the arrangement which we have pointed out. By this new set of vessels, those particles or mollicules, which are no longer useful in the economy of the tissues, after being separated from the lymph by the glands, are speedily and effectually eliminated from the lymphatic system. As, however, the object would not be completely fulfilled by the reception of these particles in the veins, it yet remains for us to inquire by what means they are eliminated from the venous blood, and expelled from the system.

It is probable that there are a great variety of means by which this end is effected, we shall, however, confine ourselves to a few observations on those which have the most considerable agency in the performance of this office. These are the lungs and the liver.

It was for a long time supposed that the function of the lungs was restricted to the act of respiration, and the decarbonisation of the blood. It has, however, been discovered within a few years, that independent of this important office, the lungs perform others equally necessary and salutary. These organs perform a highly important part in the elimination of substances from the mass of blood. Certain articles injected into the different cavities, or even into the cellular tissue, have been detected in a few minutes in the air expired: having in the mean time been taken up by the absorbents, poured by them into the veins, and from these, discharged by the lungs. It would therefore appear that the lungs are not only constantly active in giving admission into the system of materials, either beneficial or injurious to its healthy condition, but that they are equally effective in expelling those which are no longer useful, or which are mischievous.

With regard to the eliminating function of the liver, the question is not quite so well determined. Several distinguished modern physiologists have supposed that it performs a decarbonising function, similar to that performed by the lungs, but no one, so far as I know, has imputed to it the faculty of throwing off other substances from the animal economy. There are, however, several circumstances favourable to such a supposition. In the first place, the great similarity between the vascular arrangement of this organ and the lungs, would render it highly probable that this constitutes a part of its office. Both the liver and the lungs are endowed with a double set of blood-vessels; one destined to the nutrition of the organ, the other subservient to its peculiar function. In each of these organs, there is a system of vessels carrying black blood, which appear to be principally instrumental in their proper office. To the lungs this black blood is carried by the pulmonary artery; to the liver, by the vena portæ. Those substances which are thrown out by the lungs, are discharged either in a gaseous state, or in form of what is denominated pulmonary transpiration. In the liver, the recrementitious part of the blood is eliminated by secretion in the character of bile. Thus, while the bile performs so important a part in the economy of digestion, its regular and healthy formation is of the highest importance to the individual, since it is by this means the blood is freed of those properties, which, if suffered to accumulate in the system, would eventuate in disease and death.

Admitting this view of the function of the liver to be correct, we can easily perceive how even a temporary derangement of its secretion can give rise to such extensive constitutional affections. It also furnishes us with an explanation of the direful influence of malaria. It is rendered highly probable that where persons are exposed to an atmosphere abounding with this material, it is inhaled freely by the lungs, and mingles with the blood. Thus, floating in the whole round of the circulation, it paralyses every thing with which it comes in relation. The liver participating in the general affection, has its secretory function deranged, and consequently ceases to perform in a proper manner its part in freeing the blood from its injurious properties. These go on accumulating, and together with the malaria tend to augment the derangement, until the other secretory organs, by having their function increased, make up for the deficiency occasioned by the want of action in the liver. It is this, sometimes, together with a reaction of the liver, that restores the system to health, by re-establishing the equilibrium between the eliminating powers of the different organs, and the quantity of matter to be thrown off. It is also from this circumstance, that it is so essentially necessary to promote the different secretions in the cure of disease.

That the liver separates these recrementitious particles from the blood is, moreover, rendered highly probable, by the great number of lymphatic vessels which terminate in the radicles of the vena portæ. These admit the ready ingress of those particles which are to be thrown off, and explain to us the superiority of the absorbent power, which has been attributed to the vena portæ.

ART. IX. *Case of Apoplexy successfully treated by opening the Radial Artery.* By GEORGE W. STEDMAN, M. D. of St. Croix, West Indies.

I WAS called about midnight, January 12, 1826, to see a black woman, apparently about fifty years of age. I found her in violent convulsions, foaming at the mouth, her respiration exceedingly laborious, skin cold, and covered with a profuse cold perspiration. Her eyes were shut, and when forcibly opened exhibited the pupils fully dilated, and not contracting on the nearest approach of a candle. She appeared quite insensible, except, that she gave a groan, when the *scrobiculus cordis* was pressed. No pulsation was perceptible in the temporal artery, while the artery at the wrist was tense and slow. The patient seemed to be fast sinking into a state of hopeless insensibility. As I considered the alarming symptoms detailed above, to proceed from congestion of blood in the brain, I determined to bleed, and opened a vein first in one arm, and then in the other, from which not more than a table-spoonful of blood trickled. As the only chance of preserving life, I then resolved to open the radial artery at the wrist, which I did accordingly in the right arm, in the same manner as I would have opened a vein, with one cut of the lancet. From this vessel I took forty-two ounces of blood by measure, besides what was lost among the bed-clothes, for the patient was very restless, and was constantly tossing her legs and arms about. As the blood flowed she seemed to become easier, and less restless. I continued, however, to bleed her until she could answer to her name, and until the pupils contracted on exposure to light. The bleeding was then stopped by a strong compress, and the wound of the artery subsequently healed, without any inconvenience. After the bleeding from the artery had been arrested, profuse hæmorrhage took place from the veins in the arm which had been opened. They were of course secured in the usual manner. As the patient still continued in a lethargic state, breathing with slowness and difficulty, and apparently quite insensible, except when her name was called in a loud voice, and then answering with difficulty, I ordered two stimulating injections of castor oil and turpentine beat up with the yolk of an egg; a blister to the pit of the stomach, and mustard cataplasms to the thighs. By these means she was quite roused by the time I saw her, at nine o'clock next morning. She continued to improve, and in three days had quite recovered.

Art. X. *Observations on the Hirudo Medicinalis and the Mode of Raising them.* By R. Dietz, Member of the Academy of Natural Sciences of Philadelphia.

WHILST on a visit to Toulon, some months since, I was shown at the hospital of that city, a reservoir in which leeches are raised and kept for medicinal purposes, and I was informed that not only was a sufficient number there raised for the supply of the hospital, but that many were annually sold.

As leeches constitute one of the most important therapeutic agents of the physician, and as with the exception of this city, they

are not extensively used in the United States, probably from the supposed difficulty of raising and keeping them, the following observations on their mode of propagation, and the means of preserving them, will not, perhaps, be wholly uninteresting or unimportant.

Many naturalists, among others, LINNÆUS, believed the Hirudo medicinalis to be viviparous;* some asserted that the

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* Linnæus knew that the Hirudo octoculata, (vulgaris Mül. Nephelis tessellata, Sav.) was oviparous. In his Systema Naturæ, after describing this species, he says, ovum patelliforme, ovale, intus compositum, simile cocco. Indeed, the cocoon was known to this celebrated naturalist a considerable time before he knew to what animal it belonged; it is the Coccus aquaticus of his Fauna Suecica, I, No. 727.

Professor Hyacinthe Carena in his valuable "Monographie du Genre Hirudo," gives the following interesting account of the cocoons of this species, which are very different from those of the medicinalis.

On the 17th of June, says he, I remarked, a recently laid cocoon sticking to the side of the glass vessel. A leech was moving about it, examining it with its mouth, as if to smell it, sometimes fixing its mouth upon it as if to fasten it closer to the side of the vessel; this manœuvre was repeated so frequently, and with so much vivacity, that I began to fear for the egg and the germs which it contained. But in a few minutes the leech, with its mouth, made a large indentation, which had exceedingly lessened the capacity of the cocoon, disappear.

The envelope is of a greenish-yellow colour, coriaceous, much flattened, oval, with the diameters of two and a half, and one and a half lines. The extremities of the longest diameter are marked with small black or brown spots, one extremity being round with a whitish spot in the centre, the other somewhat elongated like a pedicle; the cocoon has all around it a brown border by which it is attached to the vessel, and in the lakes to rocks or the inferior surface of some aquatic plants. The free edge of this border appears ciliated.

The same day, (June 17th,) twelve small round, isolated particles, not symmetrically disposed, of a somewhat lighter colour than the cocoon, were visible in it. Two of these eggs subsequently perished, the ten others grew in a few days.

On the 23rd of June, there were already some little living leeches, and they moved round one another: the body of each appeared to be but an oblong, yellowish-green mass, with a chagreened surface.

The 27th of June, the young were considerably larger; on the 29th their disc and eyes were plainly visible.

The 4th of July, the young were still further developed, and as they moved, whenever they passed one of the black spots on the extremities of the cocoon, they gave it a blow with their head as if to break the en-young might be seen perfectly formed in the body of their parent; others, however, as Bergmann, &c. considered them as oviparous. The authority of Linnæus was so great in every department of natural history, that it is not surprising that his opinion should have long been generally received, almost without investigation, or a suspicion of its accuracy. It had indeed been observed that certain ovoid bodies, called by the French, "cocons," from their resemblance in shape to those of the silk worm, were often found in leech ponds, but they were generally considered to be formed by some unknown insect, and as they were found exclusively in places where leeches were kept, they were supposed to derive their sustenance from, and of course to be detrimental to those animals, and the ponds were therefore occasionally examined, and the cocoons removed and destroyed.

Mr. Noble, principal physician to the "Hospice de Versailles," appears to have been the first to notice particularly these cocoons, and to suspect their true nature. Mr. Achard, king's apothecary at Martinique, W. I. followed up the suggestions of the former, and published the result of his experiments in a pamphlet which procured for its author the French order of "la croix de l'honneur."

Mr. Achard states, that immediately after reading the article by Mr. Noble in the Journal Universel des Sciences Médicales for April, 1823, he went in search of some of the cocoons, and found three of them in the clay, which he put into a tumbler half filled

velope at those places; at last, an opening was effected, and every moment the young put their heads out of it, but drew back again, as if afraid of the water.

The 8th of July, a young one came out of the cocoon, and the next day, five others, and the day after, all the rest came out and swam in the water. Two days afterwards, one entered again into the cocoon, but remained there only a few hours, several others did the same during several days.

Other leeches of this species produced their cocoons in the same month, but on different days, and they offered no other variations than a few days in the period I have indicated. The number of germs was never more than twelve nor less than nine, but one or two always perished.

Some species of Hirudo, as the cephalota, are, according to professor Carena, viviparous, but for further information on this subject we must refer to the interesting monograph above quoted. Vide Memorie della Reale Accademia delle Scienze di Torino, Tome XXV. H.

with water; after a few minutes they sunk down. At the end of twenty-five days, he observed an elongation at the extremity of one of the cocoons, and two days after, he saw a filament coming out from the elongated extremity, which appeared to have motion. He took the cocoon out of the water, and having carefully opened it, he found in it three young leeches of a flesh colour, transparent, having at most the length of three centimeters and of a proportional thickness. The matter adherent to the interior walls of the envelope, was like gelatine, and it also contained a liquid of a syrupy consistence and of an ammoniacal odour. The three leeches were put into the water, where they displayed their usual motions. He also opened the remaining cocoons, which had not shown any indications of development, but found their contents to be merely a gelatinous substance and a sanguineous fluid.

It having been established that leeches are produced in these cocoons, it became an interesting subject for inquiry, to ascertain whether the latter, in size so disproportionate to the animal that produced them, with a conformation so new in the economy of nature, were generated within the animal, or constructed by it externally. After attentive examination, the leech was *seen* to discharge a soft ovoid body, of the size of a single small groundnut, enveloped in a delicate pellicle having the appearance and colour of muscular tissue. This body, soon after it is discharged, is found to be completely covered over with a snow-white slime, supposed to be derived from, and deposited by, the parent, but rather, I suspect, secreted from the capsule of the ovoid body itself. This slimy covering, when dried, assumes the appearance, consistency and colour of fine sponge; when not completely dry, it presents, on examination with a microscope, a texture of hexagonal forms, more or less regularly interlaced with each other. Within the capsule so providently covered, is contained the germ of the animal, which is thus carefully protected from danger.

The cocoons are usually about seven lines in their longest, and four lines in their shortest diameter, but they differ in size. The number of young contained in each cocoon has not been ascertained with certainty, and perhaps the number varies. Nine or ten have been seen to issue from the same cocoon, and according to the statements of some observers, as many as fifteen.

Observers differ as to the precise time required for the development of the animal. Mr. ACHARD, from repeated observations, says that he saw them come out of their cocoon at the end of from twenty to twenty-five days; while others assert that this does not happen until the end of three or four months. All may, however, be in the right, as the period may be perhaps influenced by temperature. Mr. Achard made his observations in the warm climate of the West Indies, where their development may be effected in a shorter time, than in the moderate or cold climates of Europe, where other observers made their experiments.

When developed, the young perforate the extremities of the cocoon, which is of a slighter construction, than the remaining portion, and thus disengage themselves.

Various methods have been attempted to ascertain more minutely the process of generation in these animals; but hitherto without success. They have been put into large tumblers of water provided with a sufficient quantity of clay; but as if nature would keep us in ignorance of all that relates to reproduction, in a few days they darken the sides of the vessel so completely as to render it impossible to observe them.

Some time before the cocoons above described were known to be the eggs of leeches, Mr. Achard observed that these animals prefer living in moist clay rather than in water, though at certain times they sally from their habitations in the former, and make excursions in the latter element.

The knowledge of these facts, and the circumstance of these animals not propagating when kept in water alone, induced Mr. Achard, soon after his discovery that the cocoons were the ova of leeches, to attempt to raise these animals by keeping them in moist clay, or in vessels of water lined with clay. This experiment was crowned with complete success, and it has been fully proved that the animals find their sustenance, enjoy perfect health, and deposit their ova in the clay, and that the latter there become developed, and the young speedily attain a sufficient size for medicinal purposes. The method of raising leeches is exceedingly simple, and attended with little or no trouble. At Martinique they are kept in tubs of different sizes, coated on the interior with clay supported by wooden trellis work. Some of these tubs contain water, which is seldom changed, in others, the clay is merely kept moist. At Toulon, they have a reservoir eight or ten feet long, and about five wide, at each end of which is a layer of clay, of about eighteen inches. We are informed by several gentlemen, that Mr. KUNITZ of this city, was in the habit seven or eight years since, of raising leeches for medicinal purposes, and that, at that period he exhibited to them the cocoons as the ova of the animal. Mr. RIPPERGER, of this city, says that twenty-seven years ago he showed these cocoons to the late Dr. MONGES, as the eggs of leeches. Mr. Kunitz kept his leeches in vessels with moss: we believe, however, that clay is preferable.

By adopting the simple contrivance we have described, leeches may be raised in great numbers, and every physician may thus have at his command, these valuable therapeutic agents. All that is required is to obtain a vessel of sufficient size, line it with clay, place water in it, and colonize it with a few leeches: no subsequent trouble need be taken, except to change, occasionally, the water. In no part of the United States south of this city, will these animals suffer from the climate; to the north, it will be necessary, during the winter, to protect them from the extreme cold, by placing them in a cellar or some sheltered situation. These animals, however, support considerable extremes of heat and cold. Mr. J. L. DERHEIM, in his "Histoire Naturelle et Médicale des Sangsues," states that from experiments made for that purpose, he found that leeches cannot support a temperature above 113° F. though the small ones will bear heat for a longer time than the larger: on the contrary, the latter resists cold better than the former; the small leeches being destroyed by a temperature of 20° or 23°, while the large will support it until it falls below 15° or 22° above 0.

At Toulon I was shown leeches of four years old, which had attained their full size.

ART. XI. *Meteorological Observations, made on the Island of Tinicum, eleven miles south-west from Philadelphia, latitude* 39° 48', *for the year* 1824. By GEORGE F. LEHMAN, M. D. Lazaretto Physician to the port of Philadelphia.

UPON a cursory historical examination, it will be manifest, that nearly all disorders of a violent and mortal character, which attack great numbers in a short period, are intimately connected with, and dependent on the seasons, and their extraordinary vicissitudes.

There is scarcely an epidemic on record, whose appearance and progress has not been preceded and accompanied by some of these changes and varieties of weather.

The philosophic mind, from the time of HIPPOCRATES, has not been inattentive to meteorology. That profound observer of nature says, the man who intends to practise physic, in such a manner as not to be a reproach to his profession, must have a due regard to the seasons of the year, their different influences, and the several diseases they are capable of producing. He must also be well acquainted with the state of the winds peculiar to each country, and the qualities of the waters its inhabitants drink.*

It may be conceded that to a minute observance of the seasons we are indebted for most of our present knowledge on the origin of epidemics, and the laws which govern them; and it is difficult to entertain just views of this subject without the assistance of natural phenomena.

The fact, however, is universally admitted, that all general morbid afflictions are elucidated and better understood, by a certain acquaintance with the concomitant state of the aeriform fluids; hence every writer who attempts the history of an epidemic, connects with it as an indispensable part of his duty, observations on the air, earth, and water. The history, however elaborate, would be esteemed extremely defective without such an appendage. Thus, Eusebius' description of the air during the pestilence of 262, which, according to the computation of GIBBON, destroyed a moiety of the human species, is particularly worthy of notice. Quando, inquit, aer iste pravis undique evaporationibus turbatus, serenus reddetur? Tales enim ex terra fumigationibus e mari venti, e fluminibus auræ, e portubus exhalationes spirant, ut veluti ros quidam tabidus e cadaveribus putridis, cunetis subjacientibus elementis imferatur.

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* Bell on Miasm as an alleged cause of Fevers—a learned and ingenious essay published in the eleventh volume of this Journal, which, from the strength of facts adduced, and the ingenuity of the author's reasoning, is calculated to create some doubts of the universal and sole influence of malaria as a cause of fevers.

MUTIUS, in the collection of German history, asserts the whole year 1348 was southerly moist weather, but there were no heavy rains to cool the air. The corrupt state of the air in this period was strongly marked by the appearance of myriads of unusual and loathsome insects, not only in China but in Europe.

Two hundred thousand of the inhabitants of Constantinople fell victims to the plague in the year 1611, and according to RIVERIUS, the three last summers were very hot and dry.*

The plague carried off thirty-five thousand of the citizens of London in 1625. Italy and Denmark suffered at the same time. The winter was severe, and the summer hot and moist.

HORACE TURRIANO says of the dreadful calamity that afflicted the city of Messina in Sicily, in 1743, that the spring of the year which preceded the pestilence was rough and cold. Southerly winds prevailed, which were stormy and cloudy. The cold at the time of the equinox was scarcely less than that of the preceding winter, but the winds continued to blow from the same quarter. Some of the prophets from these circumstances foretold a sickly season.

In 1764, when a hundred persons were dying a day of malignant fever, Dr. LIND† observes that the winds blew mostly from the south, and after sunset an unusual and heavy dew.

On the arrival of the French army at Alexandria in Egypt, 1798, the city had just been visited by the plague. ASSALINI states, that at this time the nights were not only cool, but damp; the ground was moist at day-break, as if there had been a fall of rain; winds from the south-west quarter prevailed; the vapours of the sea, and the exhalations of the lake Mareotis, which was not yet dried up, contributed to render a residence at Alexandria very unhealthy, particularly at this season. Whenever the winds from the south and south-west prevailed, the number of sick and of deaths was always increased. The contrary happened in fine weather, and when the wind came from the north.*

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* Riverius, lib. 17.

† Lind on Hot Climates, Part I. Sect. 4.

In America the periods of pestilence have always been distinguished by extraordinary states of the weather.

In 1762, the heat and drought exceeded what was ever before known. From June to September 22d, there was scarcely a drop of rain. The winter was equally remarkable for severity.

The summer of 1793 was excessively hot after a dry spring, and produced a great number of violent gusts, with rain and hail. The autumn was very dry.

In July, 1795, began a series of hot, damp, rainy weather, with light southerly winds; a season answering to the description which Hippocrates has given of a pestilential constitution. Heavy rains were followed by a humid, close, sultry air; no thunder and lightning; no north-westerly winds to cool and refresh the fainting bodies of men. Fruit perished on the trees, and fell half rotten and covered with mould.†

In the city of Havanna, when the winds blow from the east, or the west along the coast, the yellow fever prevails more generally amongst strangers, both in the harbour and on shore, and is more genuine and unmixed in its character than at other times, when the direction of the wind is from the sea, on the north, or from the land on the south.‡

All etiologists abound with facts of a similar tendency. Thousands might be cited were they necessary.

If, then, it appears from the testimony of all ages, that pestilential diseases are under the control of, if not entirely the consequence of aerial alterations, does it not become an indispensable task to note down with accuracy and patience every circumstance appertaining to those variations, to enable the inquirer to draw rational conclusions on the causation of disorders.

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* Assalini's Observations on the Plague.

† Webster's History of Epidemic and Pestilential Diseases. No work has been published for the last century which abounds more in useful and curious facts. His laborious industry and research have been unequalled; and the medical world is under an obligation to him which never can be repaid. To his work am I mainly indebted for the examples quoted on the peculiar state of the weather during pestilential visitations.

‡ Osgood on Yellow Fever.

"Pestilence, it has been said, sometimes originates without any visible change in the seasons or air. Hippocrates declared the plague could not be ascribed to visible causes; and Tacitus, speaking of the same disease in the time of Nero, comes to a similar conclusion. This will be admitted, and is to be explained on the supposition of some occult qualities in the air of a poisonous and deleterious quality, and is no more remarkable than that the air where diseases prevail, acknowledged to be generated by neighbouring marshes, exhibit no change or difference in its constituent particles from the air of healthy locations;" or that the Mimosa nilotica, a perfectly harmless and inert substance by the most critical chemical analysis, yields precisely the same product as the deadly poison of the rattlesnake.

"Nearly all epidemics, however, may be referred to the sensible condition of the surrounding atmosphere. Extreme and unusual heat or cold seldom fails to create diseases different very often in their character, but extensive in their operation.

"The peculiarities of the spot are usually sufficient to explain the existence of disease without wandering afar off to find out malaria, which have been carried on the winds a great distance, to fill the air with insalubrious particles."

Every country originates its own diseases, as is clearly evinced by a close and pertinent observation of the phenomena of nature in that particular country. It is true that within the tropics the natives are rarely affected by pestilential diseases. The climate soon fits the body to bear it; but we are situated precisely in the latitudes to suffer by it, as is the case with all temperate regions. In winter we have the cold of polar regions, and in summer the heat of the tropics.

The medical historian marks with great care the concomitant weather of epidemic seasons. Why is this done? To display the connection and influence of atmospheric phenomena on the reigning distemper, and to ascertain the particular condition of them most favourable to the creation of disease. In what manner can this problem be explained with more certainty than by a reference to successive meteorological tables of every season, comparing those of healthy with unhealthy periods, and noting with precision the difference between them?

A general impression prevails that our climate has undergone a melioration. Some, however, express doubts on this point, which can only be determined by years of observation.

Let not, therefore, the humble observers of nature be looked upon as dull and mechanical by more favoured and aspiring minds. If the man of genius is able to concentrate, embody, and cast into system the isolated facts of ages, he must not forget that these facts are the pillars of his building, nor treat with disdain the lowly architects who collected them for his use.

I do not presume on the value of these tables, conscious as I am of their great imperfections and deficiencies; but it has been justly decided that no fact is lost; and although local observations on the weather do not and cannot prove its general temperament, they are intimately connected with the particular disorders to which that locality is subject, and by the extension of such remarks practical advantages would no doubt follow.

When the atmosphere is equally vitiated throughout a country, although disease will prevail in all sections, it follows, that where a local poison exists, as in marshy situations and cities, the disorders will be more malignant and general.

The physician, therefore, who neglects to note the concurrent circumstances of seasons, and their instrumentality in the origination of diseases, should be considered as defective in his etiological views, as the sea captain would be in nautical affairs who attempted a voyage to the East Indies without a previous knowledge of the trade winds.

It remains for me to state that the thermometer used was hung in the shade, ten feet above the earth, and exposed to a free circulation of air; and for a few facts, and the total rains in the early winter months, I am indebted to the record of the Health-office. I regret having no barometer at my command. The general remarks, in consequence of their quantity, are necessarily placed at the foot of each month's tables. They will convey a faint idea of the weather in different sections of the Union, and a few events are noted that happened in the neighbouring colonies.

JANUARY, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	43	43	43	N. E., E.	Cloudy. Rain. Stormy.
2	37	38	39	N. E.	Cloudy. Rain.
3	39	42	44	S. W., W.	Clear.
4	40	40	43	S., S. W.	Clear.
5	41	45	50	S. W.	
6	52	53	52	S., S. W.	Cloudy. Rain with thunder and lightning.
7	34	37	38	N. W.	Clear.
8	35	41	42	S. W.	Cloudy. Rain.
9	33	40	43	W., N. W.	Clear. Wind fresh from N. W.
10	47	48	51	S. W., W.	Clear.
11	44	45	47	N. E.	Cloudy. Rain.
12	40	43	43	N. W., W.	Clear.
13	38	42	44	N. W.	Clear.
14	47	46	43	N. W.	Clear.
15	30	33	36	N., N. W.	Clear.
16	32	38	39	N., N. E.	Overcast.
17	34	38	39	N. W., W.	Clear.
18	31	34	36	E., S. E.	Clear. Flying clouds.
19	30	31	33	N. W.	Clear.
20	22	26	27	N., N. W.	Clear.
21	31	33	33	S. W., W.	Stormy. Flying clouds.
22	23	28	30	N. W.	Cloudy.
23	30	35	38	W., N. W.	Clear. Cloudy.
24	34	39	40	S., S. E.	Cloudy.
25	30	34	35	E., S. E.	Clear.
26	35	36	38	N. E.	Cloudy. Rain.
27	32	35	36	W., N. W.	Cloudy. Clear.
28	33	37	39	S. W., S. E.	Clear.
29	34	41	43	W., S. W.	Clear.
30	38	42	44	S., S. W.	Flying clouds. Clear.
31	36	40	38	S. W.	Clear.

Total rain during the month - - -	3 31-100 inches.
Average heat - - - - - - -	38¼° Fahrenheit.
Maximum - - - - - - -	53°
Minimum - - - . - - -	22°
Range of thermometer - - - - -	31°

Hottest day, 6th.—Coldest day, 20th.

January 1st.—The late heavy rains and thaw of the snow upon the mountains, have been extensive, particularly on the east side. The large rivers and streams were mostly affected by them. The river Delaware must have had a great fresh upon its head waters, as there has been for four or five days past more drift wood, logs, &c. come down the river, together with some broken ice than has been usually known:—a singular breaking up of the rivers at this season of the year. The river Schuylkill and its tributary streams, rose to a great height in consequence of the heavy and incessant rains.

It is a remarkable incident, that on this day, January 5th, there is no more ice to be seen in the river Delaware than in the month of July.

In the beginning of this month there was a sudden and uncommon high rise of White river, Arkansa Territory, and its tributary streams. The water rose from ten to fifteen feet higher than ever known before. Plantations were laid waste and horses swept off. The number of cattle and stock of every description which were drowned, is almost incredible.

Philadelphia, January 6th.—For several days past the weather has been unusually mild. This morning we have a soft rain, such as might be expected in a warm spring morning. The oldest citizens have no knowledge of such weather at this season of the year; while we are marvelling at the cause of this extraordinary mildness, the oldest persons in Quebec protest that they never remember the winter to have set in so severely or so early. The river St. Lawrence has been closed for many weeks.

January 7th.—In Virginia, the winter so far has been distinguished by the mildness of its temperature. No snow has been seen, nor ice upon the rivers. The ground can scarcely be said to have been frozen. For the last week the days have more resembled spring than winter. On Monday many of the houses had their windows hoisted; and the heat of a crowded room without a fire was even uncomfortable. The vegetation of some of the trees and flowers has advanced apace. The flower-buds of the lilac, the aspen, and some others have swelled considerably. Yesterday morning the thermometer was at 54°.

January 15th.—The trees at St. Augustine were bearing on their branches *ripe* oranges, *green* oranges, and blossoms. What a contrast between the latitudes of 29° and 45°, where nature stands still for a fourth part of the year, and man and all animation sustain themselves upon the produce of the more generous seasons.

January 17th.—The Susquehanna has been very high. On Wednesday last, a fierce and blustering westerly wind dashed about its turbid waters in magnificent style. Its angry waves in "wild confusion rolling," gave this usually peaceful stream the appearance of a young "tempest tost ocean."

January 18th.—Green peas, turnips, carrots, and radishes were in the Charleston market. Strawberries were in fruit, flower gardens in bloom, and peach trees in blossom.

January 24th—The Mississippi river is rising most rapidly, fifteen inches per day.

January 25th.—All day and night it blew a tremendous gale at New York, from N. E. accompanied with rain.

January 28th.—A large raft of boards came down the river Delaware, having all the appearance of the rafts which descend in the spring from our head waters. Such a sight was perhaps never before seen on the 28th of January.

A comet was observed in Massachusetts in the morning of December 29th, in the shoulder of Serpentarius, in a line between A and K of that constellation, and very near to the latter. The nucleus is well defined, appearing like a star of the fifth magnitude. The tail extends faintly through 6°, and points as usual, nearly from the sun. It is visible between 3 and 6 o'clock in the morning. This meteor was seen in North Carolina, January 7th, and in Virginia, January 15th.

January 28th.—Another comet has lately made its appearance, and is now visible in the constellation Draco. By reason of its great north latitude it is always above the horizon, and when there are no clouds it may be seen at any time of the night. Some astronomers, however, consider these as one and the same meteor.

FEBRUARY, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER. 9 A. M.	12 M.	3 P. M.	WINDS.	WEATHER.
1	17	19	20	N. W., W.	Clear.
2	16	21	21	N. W.	Clear.
3	21	30	31	S. W., E.	Cloudy. Small rain.
4	33	36	38	S., S. E.	Cloudy.
5	18	20	21	N. W.	Clear. Wind fresh.
6	19	23	30	N., N. W.	Clear.
7	32	37	39	S. W., S.	Overcast.
8	33	35	38	E., S. E.	Clear. Overcast.
9	36	43	45	S. E.	Cloudy.
10	40	46	49	S., S. W.	Clear.
11	54	58	61	S. W.	Cloudy. Rain.
12	37	38	36	S. E.	Cloudy. Rain.
13	27	31	34	N. W., W.	Clear. [from N. E.
14	35	38	40	N. E., E.	Cloudy. Rain. Wind very fresh
15	34	36	38	E., S. E.	Clear.
16	36	36	35	S. E.	Clear.
17	37	39	40	S., S. W.	Overcast.
18	38	46	48	S. W., S.	Cloudy.
19	32	33	33	N.	Clear.
20	34	39	41	N. W.	Clear.
21	37	44	46	N. E., N.	Clear.
22	34	35	36	N. E.	Cloudy. Rain.
23	30	31	31	N., N. W.	Flying clouds.
24	29	30	30	N. W.	Clear.
25	27	31	32	N. W.	Clear.
26	37	48	53	S. E.	Cloudy. Rain.
27	38	39	39	S., S. W.	Cloudy.
28	32	33	34	N. W., E.	Clear.

Total rain during the month - - -	**3 20-100 inches.**
Average heat - - - - - - -	**34¾° Fahrenheit.**
Decrease of heat from last month - -	**3½°**
Maximum - - - - - - -	**61°**
Minimum - - - - - - -	**16°**
Range of thermometer - - - - -	**45°**

Hottest day, 11th.—Coldest day, 2nd.

Georgetown, D. C. February 1st.—The Potomac was closed by ice for the first time this season.

Norristown, Pa. February 2d.—The weather was mild. On the 3d, boisterous and cold, and in the evening and next day, intensely freezing. The river Schuylkill, opposite Norristown, was frozen over.

Charleston, February 4th.—February has come in with a rigour that would not shame a higher latitude. One inch of ice in a tub, and a peach tree in full bloom are to be seen.

February 5th.—The thermometer at Burlington, Vermont, stood at 23° below zero at sunrise, and at 9 o'clock, about 18°. The air was perfectly still and serene. At Quebec, Fahr. thermometer was 41½° below zero, and at Montreal, on the morning of the 6th, it was 32° below zero.

The late Dr. Clarke, in his travels in the north of Europe, noticed the following remarkable phenomenon. When the door was opened, the rushing in of the cold air converted the warm vapour of the room into a whirling column or cloud of snow. Maupertius, and the French Academicians made a similar remark, while they were on their journey to Tornea, to measure a degree for ascertaining the figure of the earth.

Columbia, S. C. February 7th.—In one little week, the vicissitudes of the different seasons are often felt. Ten or twelve days ago, Fahr. thermometer ranged between 70 and 75°. On Monday last it was at 30°, and on the morning following, we were visited with a fall of snow.

Boston, February 8th.—Before day-light it blew a tremendous gale from the south, and continued with unabated fury till the morning of the 9th, accompanied with torrents of rain. Many chimnies, fences, and turrets were blown down, and great apprehensions were entertained for damage done on our coast.

Newburyport, Mass. February 9th.—A warm, southerly wind, with torrents of rain, has left the ground nearly bare, and extracted the frost in many places. We do not recollect so large a body of snow having been swept off so rapidly. The streams are much swollen, and many cellars filled with water.

Philadelphia, February 11th.—This day the thermometer stood at 34°, and all the water-courses in the streets are frozen. Yesterday it stood at 65°. The mercury has fallen more than 30° in the last twelve hours.

A destructive hurricane passed over Wilksbarre, Pa. and its vicinity. The elegant bridge over the Susquehanna at that place was hurled from the piers on the ice, and dashed to pieces. The piers were uninjured. The damages sustained in the valley, are estimated at fifty thousand dollars.

The highest freshet for seven years covered the low lands on Connecticut river this month. The ice had frozen thick, and the immense quantity which has been floating for some days by the city of Hartford, indicated that the rains up the country were extensive. The bridges at Northampton, at Brattleboro' Mills, near Deerfield, and another, opposite Charleston, well constructed, were swept away. Two gentlemen of Boston had occasion to pass over the Merrimac river, at some distance above Concord. They felt some apprehension from the height and rapidity of the stream, but one of them concluded to venture over with their horse and chaise, and the other followed on foot. The bridge tottered fearfully as they crossed it, and they were no sooner over, than they saw it all carried away by the violence of the current.

The schooner Concordia arrived on February 18th, at Baltimore in thirty-six days from Boston. She experienced very boisterous weather, and the crew were *fifteen days* without seeing *sun, moon, or stars.*

The tides on the 22d and 23d, at Wilmington, Delaware, were higher than ever before recollected, and all the meadow grounds were inundated, and the torrents of rain aided in the general destruction—banks, bridges, and fences were carried away.

February 27th.—The largest freshet for a number of years, occurred on the river Lehigh, owing to a warm rain on the snow above the mountains.

MARCH, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	30	32	32	N. W.	Clear. Very boisterous.
2	28	34	36	N. W.	Clear.
3	32	36	37	N. W.	Clear.
4	38	43	44	S. W., S.	Cloudy. Stormy.
5	41	47	49	S., S. E.	Overcast.
6	39	43	46		
7	40	42	43	S. W.	Cloudy. Rain.
8	43	45	45	S. W., W.	Clear.
9	40	44	46	W., N.	Clear.
10	39	45	45	N. W.	Clear.
11	40	47	46	N. W., S. W.	Clear. Cloudy.
12	38	40	41	N. W.	Clear.
13	37	50	49	W., N. W.	Clear.
14	36	35	35	N. E.	Cloudy. Rain.
15	34	39	39	N. E., E.	Overcast.
16	35	36	36	E., N.	Cloudy.
17	36	37	37	N. E., E.	Cloudy.
18	35	37	38	N. E.	Cloudy.
19	38	40	41	S., S. W.	Clear.
20	40	51	53	S. W.	Clear.
21	36	38	37	N. W.	Clear. Cloudy.
22	34	36	34	N. W.	Clear.
23	35	37	40	N. E.	Cloudy. Rain and a little hail.
24	45	50	51	S. W., S.	Cloudy.
25	48	55	53	S. W.	Cloudy. Clear.
26	47	51	54	W., S.	Clear.
27	45	50	53		Cloudy. Rain.
28	45	49	50	E.	Cloudy. Rain.
29	47	48	52	E., S. E.	Flying clouds.
30	42	46	47	N. E., E.	Clear.
31	44	49	48	E., N. W.	Cloudy. Clear. Rain.

Total rain during the month - - -	1 55-100 inches.
Average heat - - - - - -	41¾° Fahrenheit.
Increase of heat from last month - -	7°
Maximum - - - - - -	55°
Minimum - - - - - -	28°
Range of thermometer - - - -	27°

Hottest day, 25th.—Coldest day, 1st.

Bedford, Penn. March, 11th.—An incessant fall of rain, together with a great flow of water from the mountains, which were covered with a deep snow, occasioned an unusual flood in the branch of the Juniata at Dunning's creek, which did considerable damage.

On the 13th and 14th the rain fell steadily, and swelled the little creeks on either side of Greensburg, Pa. to an uncommon size. The rivers at Pittsburg were higher than they had been before, for 15 or 20 years, and several of the citizens who reside on the margin of the rivers have been obliged to abandon their dwellings, and convey their property away in boats.

Kentucky, March 20th.—The Kentucky river has been very full for about two weeks. It has taken a second rise, and the Ohio is higher than it has been known for years.

A brilliant meteor was seen at Norwich, Mass. March 26th, a little past ten o'clock, P. M. It appeared about the size of the sun's disk, was visible five seconds, leaving a train of light as it passed away, and was followed by a report.

March 30th.—The ice in Buffalo creek has broken up and passed off into the lake The shipping in the harbour received not the least injury from this "violent current of swelling waters."

APRIL, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	44	46	46	S. W.	Clear.
2	41	46	47	W., S. W.	Clear.
3	45	49	51	S., S. W.	Clear.
4	46	47	50	N., N. W.	Cloudy. Clear.
5	51	60	64	W., S. W.	Clear.
6	52	57	56	S. W.	Cloudy. Rain.
7	48	52	50	N. W.	Clear.
8	46	50	51	N., N. W.	Clear.
9	46	54	54	S. W., E.	Clear. Cloudy.
10	53	62	64	E., N. E.	Cloudy. Rain.
11	52	54	55	N. E.	Clear.
12	50	50	51	E., S. E.	Clear.
13	51	54	54	N. E.	Cloudy. Rain.
14	54	56	59	S. W.	Cloudy. Rain.
15	56	56	57	S., S. W.	Overcast.
16	52	54	57	W., S. W.	Clear.
17	53	53	49	S. W., W.	Clear.
18	50	51	50	W., S.	Clear. Cloudy.
19	49	53	54	N. W.	Clear.
20	52	56	57	W., N. W.	Clear.
21	58	67	69	S. W., S.	Cloudy. Clear.
22	62	68	71	S., S. E.	Clear.
23	66	67	70	S. W.	Cloudy. Rain.
24	57	63	62	W., N.	Clear.
25	60	61	60	S. W.	Clear.
26	67	73	74	S. E.	Clear.
27	56	55	49	N. E.	Cloudy. Rain.
28	44	45	43	N. W.	Cloudy.
29	52	54	58	N. E.	Cloudy. Rain.
30	54	59	62	E., S. E.	Clear.

Total rain during the month - - -	4 20-100 inches.
Average heat - - - - - - -	54 2-3° Fahrenheit.
Increase of heat from last month - -	12 3-4°
Maximum - - - - - - -	74°
Minimum - - - - - - -	41°
Range of thermometer - - - - -	33°

Hottest day 26th.—Coldest day 2d.

Several shocks of earthquakes were felt at Jamaica from April 10th to 17th.

In Hanover county, Virginia, April 11th, a most tremendous rain and hail storm happened. Nothing equal to it had been experienced for forty years. Some of the hail stones were as large as hen's eggs, and broke the glass in the windows, and killed pigs, fowls, &c.

New Orleans, April 19th.—The city was visited by a very severe storm of wind and rain, commencing early in the day, and increasing to its greatest force about noon; wind varying from near east to west of south, which occasioned considerable damage to the boats and shipping in port.

April 20th.—A severe shock of an earthquake was felt at St. Thomas. A vessel loaded with coffee sunk as she was entering the harbour, supposed to be occasioned by the earthquake.

April 23d.—At sea, longitude 2 N., latitude 29 W., the United States' sloop of war Peacock was struck by lightning—both the fore and main masts were stricken at the same time, and four men killed, and several were severely burned.

Quebec, April 25th.—The weather was unusually warm. On the 26th there was a cold storm, and a severe frost at night. The snow was still eighteen inches deep in the woods.

Raleigh, N. C. April 30th.—Spring now wears its brightest livery, and the refreshing rains preceding the present warm weather have dissipated our fears "that the vine is dried up and the fig-tree languisheth." The sweet climbers of the southern states are in full bloom, and offer to the eye and scent of the traveller a rich treat of nature's furnishing.

Roxbury, Mass. April 30th.—The present is not only one of the earliest, but it is also one of the most forward seasons we have ever known. The winter was mild beyond all recollection, and this character extended to Europe. Information from England states they had no winter.

Flowers were in bloom through every month of the year. Asparagus has been cut from eight to fifteen days earlier than usual on the same beds. The maple flowered eight days sooner than its common period; the gooseberries six days earlier. The grass uncommonly forward, and very well set. The winter grain did not suffer in this vicinity, and is at least six inches high, and very vigorous.

MAY, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	66	69	68	S., S. W.	Hazy. Light rain during the night. Flashes of lightning.
2	65	69	73	E., S. E.	Hazy. Clear.
3	65	69	72	E., S. E.	Hazy.
4	63	66	68	S. E.	Cloudy.
5	56	57	58	N. E., E.	Overcast. [Hard rain at night.
6	54	55	56	N., N. E.	Cloudy. Frost in the morning.
7	60	63	66	S. W.	Cloudy. Clear at night.
8	64	68	72	S., S. W.	Cloudy. Wind fresh from S. Light thunder. At night hard rain.
9	61	63	65	N. W.	Clear. Wind fresh.
10	60	62	60	W., N. W.	Clear. Frost in the morning.
11	60	68	60	S., S. W.	Clear.
12	66	72	76	S. E., S.	Clear. Cloudy.
13	68	66	64	N. W.	Clear. Wind fresh.
14	54	58	61	N. W.	Clear. Wind very fresh.
15	54	58	62	N. W.	Overcast. Clear.
16	61	63	64	S., S. E.	Overcast. Clear.
17	55	59	60	N. E., S. E.	Clear. Cloudy.
18	52	58	62	N. E., S. E.	Cloudy. Drizzly.
19	58	60	63	E., S.	Cloudy. Drizzly.
20	68	70	68	S. E., S. W.	Clear. Cloudy. Fine showers. Hard rain at night, with vivid lightning and thunder. Wind N. W.
21	59	61	58	N. W.	Clear. Cloudy.
22	60	65	66	N. E., S. E.	Clear. Cloudy.
23	52	63	70	N. E.	Clear. Cloudy.
24	62	70	70	S., S. W.	Clear.
25	61	62	61	S. W.	Cloudy. Light rain, with frost. Lemon trees a little blighted.
26	51	62	63	N., S. W.	Clear.
27	63	70	70	S. by W.	Clear. Wind fresh.
28	73	76	80	S. W.	Clear. Wind fresh. Air electric at night, continual flashes of lightning.
29	74	80	80	N. E., S. E.	Clear. Small rain in the morning.
30	70	73	74	N. E., S. E.	Clear.
31	66	70	73	S. W.	Clear.

Total rain during the month - - - 2 25-100 inches.

Average heat - - - - - - - 64⅓°

Increase of heat from last month	9 2-3°
Maximum	80°
Minimum	51°
Range of thermometer	29° Fahrenheit.

Hottest day, 29th.—Coldest day, 26th.

May 1*st.*—The river Mississippi is uncommonly high for the season of the year.

Philadelphia, May 5th.—The air is so cool that a fire is quite agreeable.

May 9*th.*—The shock of an earthquake was felt at Kingston, Jamaica.

Quebec, May 10*th.*—The weather has been remarkably cold and unsettled for some time past. Snow fell several times during last week. The Indians state, that a few miles in the interior, the snow is four feet deep.

May 14*th.*—There are now in flower, at the Linnæan Garden, New York, more than one thousand five hundred tulips in the highest perfection, comprising above six hundred of the finest varieties known in Europe.

Salem, Mass. May 15*th.*—Vegetation has received a check from the c[illegible] north winds, which have prevailed for a few days back. Yesterday the air was filled with falling snow flakes, and the sky exhibited the wildness and sternness of [illegible]arch weather.

New York, May 18*th.*—It is now the middle of May, and the cold is so severe that it is necessary to keep up fires in our parlours, and vegetation is backed by the prevalence of the north winds. Similar unseasonable weather prevailed in New Orleans in the middle of April.

Richmond, Va. May 18*th.*—Between sundown and dusk, a large and brilliant meteor shot across the sky. Its course was from the S. W. to the N. W.

New Philadelphia, Ohio, was visited by a whirlwind, May 18th. A heavy dark cloud in the form of an inverted sugar-loaf, approached and burst upon a part of the town, with tremendous and irresistible effects. Many houses were unroofed. Its force was almost as great and evanescent as electricity. In two minutes after the commencement of the roar and crash, all was silent and calm.

Paris, Ky. May 19th.—The greatest rain probably ever seen in this country, occurred, mingled with hail, and producing most destructive effects, sweeping away fences, &c.

A slight shock of an earthquake was experienced May 20th, between 11 and 12 o'clock, A. M.

Providence, R. I. May 23d.—A severe frost injured the vegetable world. Ice a quarter of an inch thick was made.

May 27th.—There passed over the village of Buffalo, this morning, a most severe thunder storm. It commenced between twelve and one o'clock, and with a short cessation, continued until nearly daylight, accompanied with wind, rain, and hail. The incessant and vivid flashes of lightning, with the tremendous peals of thunder, were well calculated to inspire the mind with solemnity and awe. It is supposed six inches of rain fell. Several houses were struck by lightning. We have had a few days of summer-like weather since the tempest.

May 28th.—The season has been thus far cold, and rather wet, scarcely a day has yet passed so warm, that a fire was not agreeable; but the frost has not, so far as our observation has extended, done any considerable injury. The prospect is fair for a large quantity of fruit, the grain and grass look pretty well; we speak of West Chester, and its neighbourhood, the Brandywine and Chester creek hills and valleys. In any other part of the earth the grain and grass would be thought highly luxuriant and promising.

JUNE, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	74	76	73	S. W., S.	Cloudy. Fine showers.
2	77	80	72	S. W., N., N. E.	Cloudy. Rain and thunder and lightning, P. M.
3	62	62	61	N. E.	Cloudy. Rain.
4	70	74	74	S. E., S. W.	Cloudy. Hard rain all day.
5	73	77	78	S. W.	Cloudy. Clear.
6	78	82	85	S. W., N. W.	Clear.
7	78	82	84	S. W.	Clear. Cloudy. Light rain.
8	86	88	86	N., S. W.	Clear. Cloudy.
9	81	84	84	W., S. W.	Clear. Cloudy and drizzly towards evening.
10	66	70	71	N. W.	Clear. Wind fresh.
11	66	70	71	N., N. W.	Clear. Therm. 54° at 5 A. M.
12	68	72	76	S. W.	Clear. Overcast. Rain at night.
13	61	61	61	N. E.	Cloudy. Light rain.
14	66	68	67	N. W.	Clear. Cloudy. Therm. at 53° 5 A. M. Wind fresh at night.
15	60	65	66	N. W.	Clear. Therm. 48° at 5 A. M. Tomatice and horse bean vines killed by the frost.
16	66	69	69	N. W.	Clear. Overcast. Rain at night.
17	64	64	67	N. W.	Clear. Overcast. Drizzly.
18	68	72	73	N. W.	Clear.
19	70	78	78	S. W.	Clear.
20	68	70	70	S. W.	Cloudy. [night.
21	69	73	74	N. E., S. E.	Cloudy. Wind fresh and rain at
22	63	66	67	N. E.	Cloudy.
23	69	76	79	S. W.	Clear.
24	77	81	83	S. A gale N. W., P. M.	Cloudy. Clear. Fine showers and thunder and lightning 5 A. M. Large rain P. M. Therm. 71°.
25	72	74	73	W. a gale N. W.	Cloudy. Clear. Wind very fresh all day.
26	76	79	80	N. W.	Clear. Wind fresh.
27	84	80	82	S. W.	Clear. Wind fresh.
28	75	77	79	N. E., S. E.	Cloudy. Clear. Showers. Hard rain at night and lightning and thunder.
29	75	80	82	N. W., S. W.	Clear. [lightning.
30	80	82	82	S. W.	Cloudy. Drizzly and thunder and

Total rain during the month - - -	3 91-100 inches.
Average heat - - - - - - -	73½°
Increase of heat from last month - -	9 1-6° Fahrenheit.

Maximum	88°
Minimum	60°
Range of thermometer	28°

Hottest day, 8th.—Coldest day, 15th.

Norristown, Penn. June 2nd.—The season has so far been unusually cold, but a few warm days and frequent rains have made the earth appear beautiful, luxuriant, and promising. The fruit trees are covered with fruit, and promise an abundance. The grass never had a better appearance. The wheat it is expected will be as good as common—some fields the Hessian fly are destroying.

Baltimore.—After several days of rain the weather cleared up on the 3rd. On the 4th the heat was very high, and on the seventh, the thermometer stood at 93° in the shade, and on the 8th, at twelve o'clock, at 91°.

Columbia, S. C. June 8th.—One of the most destructive hail storms we recollect ever to have heard of, passed through Lexington district; and crossing Broad river about four or five miles above this place, went through the upper part of Richland district, destroying every thing in its course; on one plantation, the only one from which we have had a particular account, not a stalk of corn was left; and one field of about 89 acres, just beginning to tassel, was so completely beaten to pieces, that in many spots, not a trace of corn remained. Our informant on whom we can rely, and who was on the place during the storm, assures us that after it was over, (and it lasted nearly an hour,) the hail lay half-leg deep on the level ground; that many of them were nearly as large as a hen's egg, and quite round; and that the bark was beaten off of many trees of considerable size. Great damage was also done by the wind, in unroofing houses and tearing up trees.

June 11th, Petersburg, Virginia, was visited by a considerable storm of wind, rain, and hail, from the N. W. Such was its violence that the roofs of several houses, chimnies, &c. were blown down. Previous to the storm, the atmosphere was remarkably dense and sultry.

June 13th.—Great quantities of hail fell in Greenburg, Penn. which did considerable damage to the crops.

St. Louis, Missouri, June 13*th.*—A smart shock of an earthquake was felt about eleven o'clock in the night.

At *Reading, Penn. June 24th,* there was much rain accompanied with some hail, and wind, lightning, and heavy peals of thunder.

Baltimore, June 29th.—We scarcely ever witnessed more dreadful thunder storms than those with which our city was visited last evening and this morning. The thunder was tremendously loud, and almost incessant, and the lightning one continued glare. The electric fluid entered the gas tube at Mr. Canfield's window, and descended into the pipes, as the gas lights of the offices, stores, and city lamps, from above Barnum's hotel on the opposite side, to Belvidere street were extinguished, while the oil and candle lights were untouched.

Richmond, June 28th, was one of the hottest days we have experienced during the summer. A spirit thermometer graduated by Fahr. scale stood in the shade on Shockœ hill at one time at 98°.

In the middle of this month the frost was so severe in Montrose, and other parts in Pennsylvania, as to cut down many fields of corn and rye.

We had a few of the hottest and coldest days experienced here in June, for years past. The thermometer was up to 88°, and down to 61°, at 3 P. M.

Thunder gusts were very common, and much injury caused by lightning in many parts of the union.

JULY, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	76	79	81	N. W.	Clear.
2	74	78	81	S. W.	Hazy.
3	77	80	82	N. W.	Clear.
4	70	73	75	N. W.	Clear.
5	70	74	76	S. E.	Cloudy.
6	72	76	78	S. E., S. W.	Cloudy. Clear. Hard showers and thunder and lightning at night.
7	76	80	81	N. W.	Clear. Wind fresh.
8	73	76	79	N. W.	Clear. Wind fresh.
9	78	80	84	S. W.	Hazy. Clear.
10	79	82	84	S. W.	Clear. Cloudy. Rain P. M. Thunder and lightning.
11	73	74	77	N. E., E.	Cloudy. Clear.
12	73	75	76	N. E., E.	Cloudy.
13	72	74	75	N. E.	Cloudy. Rain all day.
14	69	72	74	N. E.	Cloudy. Showery.
15	76	77	78	N. W.	Clear. Wind fresh.
16	68	70	73	N. W.	Clear.
17	71	73	77	W., S. W.	Clear. Cloudy.
18	77	79	80	N. W., W.	Hazy.
19	76	76	74	N. E., N.	Cloudy. Hard showers.
20	74	78	80	N. W., S. W.	Clear. Cloudy. Shower at night.
21	68	72	74	N. W.	Clear.
22	71	75	77	S. W., N. W.	Clear.
23	76	80	78	S. W., S.	Clear. Cloudy. Wind fresh from S. Hard rain and a little lightning and thunder.
24	73	75	76	N. W., S. W.	Cloudy. Clear. Small rain. Winds light and variable. Rain at night with thunder and lightning.
25	75	78	80	N. E., E.	Clear. Cloudy.
26	74	79	82	S. E., S. W.	Clear. Air electric at night.
27	78	82	79	S. W.	Hazy. Cloudy. Showers. Thunder and lightning.
28	74	75	76	N. E.	Cloudy. Rain.
29	73	78	80	N. E., S. W.	Overcast. Clear. Rain, a deluge at night, with incessant lightning and thunder.
30	75	78	80	E., S. E.	Cloudy. Clear.
31	78	82	83	S. W., N. W.	Clear. Overcast.

Total rain during the month	7 21-100 inches.
Average heat	76⅓° Fahrenheit.
Increase of heat from last month	3°
Maximum	84°
Minimum	68°
Range of thermometer	16°

Hottest day, 10th—Coldest day, 16th.

Charleston, July 1st.—The city has for four days past suffered under an intenseness and continuation of heat, seldom if ever experienced here before. It has endured almost literally an atmosphere of fire. Several valuable lives fell victims to the excessive warmth.

July 2d.—Two men lost their lives at the Alms House, Philadelphia, from foul air. One went to clean out a sewer in the yard, and sunk down, crying for help—the other went to his assistance and both perished. Why will not men take the trouble to try by a lighted candle, whether the air will support animal life?

Cheraw, S. C. July 2d.—The heat experienced for the last six days, is altogether unparalleled in this country. The mercury in an excellent Fahrenheit thermometer, stood at 3 o'clock, P. M. exposed to the air in the shade, Saturday last, at 93°; on Sunday, at 94°; on Monday, at 103°; on Tuesday, at 103°; on Wednesday, 105°; and on Thursday, at 100°. During all this time we have had no rain, and the heat still continues to be distressingly oppressive.

Columbia, S. C. July 3d.—Such a degree of heat has not been felt here since '93. The thermometer is at 100°. The birds seek the deepest recesses of the forest, and the woods which were full of melody, became silent as solitude could make them. The panting cattle rushed to the nearest water, and laved their burning sides in its refreshing streams. The energies of man too became enervated and subdued, and without an effort he yielded to the fervent element.

July 6th.—A very heavy gust of wind, with rain, was observed to pass a short distance north of the city of Lancaster. We have since heard that a tornado or whirlwind unroofed a barn near Binkless bridge, and continued to overthrow every thing that came in its way until it reached Soudersburg.

Charleston, S. C. July 8th.—After a very unusual period of hot weather, we were refreshed yesterday afternoon with a heavy fall of rain, accompanied with a great deal of thunder and lightning and some hail.

Pittsburg, July 13*th.*—The late rains have swelled the rivers to an uncommon height, and the prospect for an uninterrupted navigation of the Ohio, bids fair to continue for some time.

Pottstown, Penn. July 17*th.*—A violent storm, with vivid lightning, passed through part of this county, and injured the trees, fences, and grain fields. Grasshoppers have been very injurious to the clover, and in several places the crops were nearly destroyed by them.

July 20*th.*—The shock of an earthquake was felt in Chilicothe and Marietta, Ohio.

Alexandria, D. C. July 20*th.*—At 10 o'clock at night we were surprized with a sudden and glaring light. The course of the meteor was S. W. It was visible three minutes.

July 23*d.*—The city of New York was visited by one of the most tremendous thunder storms ever witnessed. The cloud rose from the N. W. and was slow in its progress. It commenced raining about 1 o'clock, and by 2 it poured in torrents, intermingled with a violent storm of hail, and accompanied by a heavy wind. It was a sublime and awful moment. The flashes of lightning were frequent and vivid, and the peals of thunder tremendous.

Baltimore, July 28*th.*—On Saturday a vivid meteor was seen from S. E. by E. to N. W. Its elevation was about 80°.

Reading, Penn. July 28*th.*—Unusually heavy showers of rain occurred, which caused the river Schuylkill to rise in a few hours nearly five feet perpendicular.

Detroit, July 29*th.*—The mercury stood in Fahr. thermometer in the shade, at 95°, and at 1 o'clock at 100°.

The malignant fever prevails in Charleston, S. C. this summer.

AUGUST, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	70	73	75	N. W.	Clear.
2	70	76	78	S. W., S.	Clear.
3	73	74	76	S. W.	Cloudy. Wind fresh. Rain, with thunder and lightning.
4	69	71	72	N. W.	Clear. Wind fresh.
5	64	68	69	N. E., N.	Clear. Therm. 56° at 5 A. M.
6	66	71	73	N. W., S. W.	Clear. Therm. 57° at 5 A. M. Drizzly at night.
7	71	75	78	S. W.	Clear.
8	74	78	77	S. E.	Clear. Cloudy. Moderate rain.
9	75	78	80	W., S. W.	Overcast. Clear.
10	72	75	76	N. W.	Clear.
11	68	71	74	N. W.	Clear.
12	69	74	76	N. W.	Clear.
13	69	75	75	N. W.	Clear.
14	68	71	72	N. E.	Clear.
15	68	71	70	N. E.	Clear.
16	68	74	75	S. W.	Clear.
17	69	75	78	S. W.	Clear.
18	70	75	78	S. W.	Clear.
19	75	81	83	S. W.	Clear.
20	77	80	80	N. E.	Clear. Smart shower at night.
21	69	73	75	E., S. E.	Cloudy. Large shower at night, with lightning and thunder.
22	77	78	81	N. W., S. W.	Clear.
23	72	74	75	N. W.	Clear.
24	69	73	75	N. E.	Clear.
25	68	73	77	N. E., S. E.	Clear.
26	70	72	73	N. E.	Cloudy. Large rain.
27	73	76	74	N. E., N. W.	Cloudy. Clear. Moderate rain.
28	74	76	77	N. E., N. W.	Cloudy. Showers.
29	69	71	70	N. E.	Cloudy. Light rain.
30	68	67	62	N. E.	Cloudy. Rain all day.
31	62	64	64	N. E., N. W.	Cloudy. Hard rain at day-light.

Total rain during the month - -	3 39-100 inches.
Average heat - - - - - -	72 2-3° Fahrenheit.
Decrease of heat from last month -	3 2-3°
Maximum - - - - - - -	83°
Minimum - - - - - - -	64°
Range of thermometer - - -	19°

Hottest day, 19th.—Coldest day, 5th.

Trenton, N. J. Aug. 8th.—This city was visited by a heavy storm of rain, with much thunder and lightning. Great damage was done by the lightning.

Natches, August 16th.—For the last six weeks there has not been less than one death every week by a stroke of the sun. Negroes on farms, who have been in the country twenty-four years, have fallen instantly, and died in a few hours. The thermometer has not ranged higher in the shade than 94 degrees.

August 21st.—The inhabitants of the borough of Washington, Penn. and the adjacent country, were blessed with a refreshing shower of rain, what they have not experienced for thirty-three days before, excepting one slight shower that fell about twenty-two days ago.

August 22d.—The citizens of Florence, Alabama, and its vicinity, perceived a severe shock of an earthquake. It was supposed to have lasted at least a minute.

The weather has been very hot and dry in New Orleans, and the malignant fever prevails there. Seven physicians fell victims to it from the middle of August to September 25th.

SEPTEMBER, 1824.

Norfolk.—From the 4th to the 14th of this month, the sun was almost perpetually concealed by a veil of dense and watery clouds, and during that period, the rain fell at intervals in unusually copious showers. At the same time the atmosphere was remarkably close, sultry, and humid, covering with a greenish mould every object not exposed to a free circulation of air.

St. Augustine, September 18th.—On Monday last, a severe blow came on from the N. E. which continued to increase, accompanied with rain till Tuesday evening, when it blew a gale.

A most destructive hurricane visited the southern states early this month, doing great injury, and causing the loss of many lives.

SEPTEMBER, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	63	66	68	N. W.	Clear. Cloudy. Rain at daylight. Thermom. 58°
2	66	70	74	S. W.	Clear.
3	69	68	68	S. W., S. E.	Cloudy. Small rain.
4	72	74	76	S. W.	Cloudy.
5	70	75	75	S. W.	Cloudy. Small rain.
6	70	75	75	N. W.	Clear. Cloudy. Hard rain at night.
7	70	71	69	N. E.	Cloudy. Large rain.
8	70	71	70	S. E., N. W.	Cloudy. Large rain.
9	55	60	63	N. W., N.	Cloudy. Hazy. Thermom. 52° at sunrise.
10	60	65	66	N. E.	Clear. Hazy. Thermom. 54° at sunrise.
11	61	60	61	N. E.	Cloudy. Rain.
12	60	63	64	N. E.	Cloudy. Rain.
13	64	68	72	E., S. W.	Cloudy. Clear.
14	69	74	78	S. W.	Cloudy. Clear.
15	72	76	78	S. W.	Cloudy. Clear.
16	76	80	82	S. E. A gale.	Overcast. Clear. Rain at night.
17	75	78	79	N. W.	Overcast. Clear.
18	60	67	68	N. E.	Clear. Thermometer 58° at 6 A. M.
19	58	59	61	N. E.	Cloudy. Small rain.
20	64	68	67	N. E.	Clear. Overcast.
21	60	65	66	N. E.	Clear. Overcast.
22	62	70	74	S. W., N. W.	Clear.
23	56	60	62	N. W.	Clear. Thermom. 50° at 6 A. M.
24	54	59	62	N. W.	Clear. Thermom. 46° at 7 A. M.
25	52	60	63	N. E.	Clear. Thermom. 46° at 6 A. M.
26	58	62	63	N. E.	Clear. Hazy.
27	57	60	63	N. W.	Clear.
28	56	63	66	N. W.	Overcast.
29	60	62	60	N. E.	Cloudy. Small rain.
30	60	64	66	N. E.	Clear.

Total rain during the month	5 50-100 inches.
Average heat	66⅓° Fahrenheit.
Decrease of heat from last month	6⅓°
Maximum	82°
Minimum	52°
Range of Thermometer	30°

Hottest day, 16th.—Coldest day, 25th.

OCTOBER, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	60	64	65	N. W.	Clear.
2	56	62	64	N. W.	Clear.
3	54	60	63	S. E.	Clear.
4	58	64	65	N. W.	Clear.
5	59	64	66	N. W.	Clear.
6	62	65	64	S., S. W.	Cloudy. Moderate rain.
7	62	64	62	N. W.	Overcast.
8	48	54	54	N. W.	Clear. Frost A. M.
9	56	64	66	S. W.	Clear. Frost A. M.
10	62	69	70	S. W.	Clear.
11	64	67	69	S. W.	Cloudy. Small rain at night.
12	68	66	68	N. W.	Clear.
13	50	53	56	N. W.	Clear.
14	53	55	56	N. W.	Cloudy. Small rain.
15	54	56	58	N. W.	Clear.
16	54	58	62	S. W.	Clear.
17	57	62	66	S. W.	Clear.
18	54	62	65	N. E., S. E.	Clear.
19	55	61	63	N. W.	Clear.
20	64	66	68	S. W.	Hazy. Clear.
21	58	60	62	N. W.	Hazy.
22	50	55	56	N. W.	Clear.
23	49	54	55	N.	Clear.
24	47	50	52	N. E.	Cloudy.
25	48	51	53	N. E.	Hazy.
26	60	62	64	S. E.	Cloudy. Hard rain.
27	47	50	51	N. W.	Clear.
28	45	49	50	S. W.	Clear.
29	41	44	45	N. W.	Clear.
30	40	43	44	N. W.	Clear. Ice made.
31	38	42	46	N., S. W.	Clear. Cloudy. Ice made.

Total rain during the month - -	**1 92-100 inches.**
Average heat - - - - - -	**57° Fahrenheit.**
Decrease of heat from last month -	**9⅓°**
Maximum - - - - - -	**70°**
Minimum - - - - - - -	**38°**
Range of thermometer - - -	**32°**

Hottest day, 10th.—Coldest day, 31st,

New Orleans, October 3d.—Within a few days past two or three good frosts have happened, which have terminated the late epidemic.

Black spots may be seen with a good spy-glass on the sun as he rises, or until he is from five to seven degrees above the horizon.

October 11*th.*—There was a very heavy fall of snow at Quebec.

October 29*th.*—The snow was nine inches deep at Ashtabala, Ohio.

October 30*th.*—A fall of snow occurred at New York.

NOVEMBER, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	42	48	48	N. E.	Cloudy.
2	42	50	52	N. E., S. W.	Cloudy.
3	34	41	42	N. W.	Clear.
4	32	43	49	N. E., S. E.	Clear.
5	56	57	57	S. E., S. W.	Cloudy. Clear. Hard rain with lightning and thunder, A. M.
6	43	45	46	N. W.	Clear.
7	42	46	48	N. W.	Clear.
8	42	46	48	N. W.	Clear.
9	39	46	48	N. E.	Cloudy. Rain all day.
10	48	53	56	N. W.	Cloudy. Clear.
11	40	42	46	N. W.	Clear.
12	33	40	42	N. W.	Clear.
13	32	39	41	N. E.	Clear.
14	34	44	46	S. W.	Clear.
15	43	56	57	S. W., S.	Cloudy. Large rain.
16	62	58	57	S. W.	Cloudy. Rain.
17	44	46	47	N. W.	Cloudy.
18	36	38	39	N. W.	Clear.
19	32	40	41	N. W.	Clear.
20	31	38	40	N. W.	Clear.
21	33	40	50	N. E.	Clear.
22	38	47	52	S. W.	Clear.
23	49	52	53	N. W.	Clear.
24	42	52	55	S. W.	Clear. Overcast.
25	40	48	50	N. W.	Clear.
26	36	50	51	S. W.	Clear. Cloudy. Rain at night.
27	54	53	60	S. W., N. W.	Cloudy. Clear. Small rain.
28	45	48	46	N. E.	Cloudy Rain at night.
29	41	43	45	N. E.	Cloudy.
30	44	50	50	N. E., S.	Cloudy.

Total rain during the month	3 12-100 inches.
Average heat	45½° Fahrenheit.
Decrease of heat from last month	11½°
Maximum	62°
Minimum	31°
Range of thermometer	31°

Hottest day, 16th—Coldest day, 20th.

Charleston, S. C. November 1st.—There was a frost in the neighbourhood of Georgetown on Thursday morning last, and on Saturday night and yesterday morning the air here was very keen and cold.

Reading, Penn. November 5th.—Between the hours of 9 and 10 o'clock, we experienced several loud claps of thunder, preceded by vivid flashes of lightning, and accompanied by rain, wind S. E.

On the 5th and 6th instant, a violent gale happened at Quebec, from E. N. E. attended with snow.

Harrisburg, November 6th.—Wednesday night last was very cold, and on Thursday morning the earth was frozen more than an inch in depth. On Friday we had a thunder gust, succeeded by the temperature of May.

Westchester, Penn. November 23d.—A tremendous storm of thunder, lightning and rain passed over us. Considerable injury was done by the lightning.

Wiscasset, November 26th.—The ground is frozen hard, and covered with several inches of snow.

DECEMBER, 1824.

DAYS.	FAHRENHEIT'S THERMOMETER.			WINDS.	WEATHER.
	9 A. M.	12 M.	3 P. M.		
1	50	51	50	N. E.	Cloudy.
2	47	48	49	N. E.	Cloudy.
3	39	40	42	N. E.	Cloudy. Rain. Gale at night from [N. W.
4	32	36	40	N. W. A gale.	Cloudy. Clear. Rain and a little snow A. M.
5	28	32	31	N. W. A gale.	Clear. Ice.
6	28	38	40	S. W.	Overcast. Drizzly at night.
7	36	42	42	W., N. W.	Overcast. Clear. Drizzly A. M.
8	39	39	38	S. W., W.	Clear. Cloudy.
9	34	38	40	N. W.	Clear.
10	36	40	44	S. W.	Cloudy. Small rain.
11	43	46	48	S. W.	Clear. Cloudy.
12	40	44	44	N.E., E.	Clear. Cloudy. Rain at night.
13	44	47	49	S. W.	Cloudy. Rain A. M.
14	34	38	41	N. W.	Clear.
15	32	33	36	N. W.	Clear.
16	30	33	35	N. W.	Clear.
17	29	32	34	N. E.	Cloudy. Rain, and a gale at night [from S. E.
18	58	59	61	S. E. A gale.	Cloudy. Rain.
19	41	46	45	N. W.	Clear. Overcast.
20	32	40	42	N. W., S. W.	Clear.
21	32	36	37	N. W.	Clear.
22	36	37	39	N., N. E.	Cloudy. A sprinkle of snow.
23	31	33	34	N. W.	Clear.
24	30	36	40	S. W. Fresh.	Clear.
25	34	36	37	S. W., N. E.	Cloudy. Clear.
26	34	41	42	N. E.	Clear.
27	32	38	46	W., S. W.	Foggy. Clear.
28	34	42	40	N. E.	Clear. Cloudy.
29	33	34	38	N. E., N. W.	Clear.
30	33	34	38	S. W.	Cloudy. Rain.
31	40	45	50	S. W.	Clear.

Total rain during the month - - -	**2 9-100 inches.**
Average heat - - - - - -	**39¼° Fahrenheit.**
Decrease of heat from last month - -	**6¼°**
Maximum - - - - - - -	**61°**
Minimum - - - - - - -	**28°**
Range of thermometer - - -	**33°**

Hottest day, 18th.—Coldest day, 5th.

Buffalo, December 7th.—On Wednesday last at 4 P. M. the thermometer rose to 69° suspended in the shade.

Charleston, S. C. December 9th.—The weather continues so mild, that in a garden in Meeting street, some pear trees are in blossom, and the fig-trees have fruit upon them as large as nutmegs.

Darien, Georgia, December 14th.—Mulberry trees are now yielding ripe fruit, and ripe damsen plums were plucked from the trees on the 9th instant.

December 20th.—In Savannah the thermometer is more than 30 degrees above the freezing point. The grass has begun to dress itself in green; the jessamines and woodbine have expanded their leaves, and present full-blown flowers. Ripe mulberries have been brought to market, and peaches are of the size of a nutmeg of the second crop of the year.

At Milton, N. C. December 20th, the water rose more than twenty feet. All the river lands were inundated, and the appearance resembled a lake of no ordinary magnitude.

The temperature of the whole year was moderate, moist, and agreeable. The spring was mild and abundant in showers, and the summer very wet, and the coolest since 1816, with the exception of the months of June and July of 1823. Compared with the three preceding years, very little sickness prevailed throughout the state. A change appears to have taken place in the constitution of the atmosphere, which it is to be hoped will banish country sickness for a long time.

Vegetation was very prolific. Corn plentiful. The summer of 1823 was remarkable for good corn—this season it was superior. Wheat fine and large-grained. The crops of oats, rye, and hay were fair, and generally of a good quality. Pasture rich and abundant through the summer and fall, which was so mild as not to check its growth. Peaches, apples, and other fruits, excellent and abundant. Potatoes and other vegetables in great quantity.

Result of all the Meteorological Observations made on Tinicum Island in the year 1824.

Months.	THERMOMETER.						Number of Fair days.	Number of Cloudy days	Depth of Rain.	Prevailing Winds.	Prevailing Weather of each Month.
	Mean Temperature.	Maximum.	Minimum.	Range of Thermom.	Hottest day.	Coldest day.					
January	38¼°	53°	22°	31°	6th	20th	18	13	3 31-100	N. W., S. W	Fair and moderate.
Feb.	34¼	61	16	45	11th	2nd	14	14	3 20-100	N. W., S. W., S.	Moderate and agreeable.
March	41¾	55	28	27	25th	1st	13	18	1 55-100	N. E., N. W., S.	Cloudy, tempestuous and unpleasant.
April	54⅔	74	41	33	26th	2nd	17	13	4 20-100	S. W., N., N. E.	Fair, and favourable to agriculture.
May	64⅓	80	51	29	29th	26th	14	17	2 25-100	S. E., N. E.	Disagreeable and bleak.
June	73½	88	60	28	8th	15th	10	20	3 41-100	S. W., N. W.	Variable, moist and favourable to vegetation.
July	76⅓	84	68	16	10th	16th	11	20	7 21-100	N. W., N. E.	Cloudy, very moist and advantageous to agriculture.
August	72⅔	83	64	19	19th	5th	21	10	3 39-100	N. E., N. W.	Very fair and agreeable.
Sept.	66⅓	82	52	30	16th	25th	10	20	5 50-100	N. E., N. W.	Cloudy, cool and moist.
October	57	70	38	32	10th	31st	22	9	1 92-100	N. W., S. W.	Very fair, dry and agreeable.
Nov.	45½	62	31	31	16th	20th	16	14	3 12-100	N. W., N. E.	Moderate and pleasant.
Dec.	39¼	61	28	33	18th	5th	14	17	2 9-100	N. W., N. E.	Cloudy, cool.
							180	185	41 65-100	N. W., N. E.	

Prevailing winds of the year, N. W., N. E.
Total rain of the year, 41 65-100 inches.
Hottest month, July.
Coldest month, February.
Greatest range of thermometer occurred in February, 45 degrees.
The mercury was the highest June 8th, 88 degrees—lowest, February 2d, 16 degrees.
Thunder and lightning occurred in nineteen days.

ART. XII. *Thoughts on Diabetes.* By N. CHAPMAN, M. D.

NOT the least of the disadvantages under which many of the physicians of the United States labour, is the want of access to the foreign medical publications. Excepting one or two of the systematic works, reprinted in this country, serving as a Vade Mecum to ordinary or routine practice, the greatest difficulty is encountered by practitioners remote from our large cities, in procuring the very valuable treatises annually emitted from the European press.

In Britain and France especially, medicine has within the last few years, advanced with unexampled rapidity, and is now still more philosophically cultivated, by which has been established greater precision and certainty in theory as well as practice than at any former period in the history of the science. As a substitute in part for the works themselves, it has occurred to me, that I might render some service to that portion of our medical community, to which I have alluded, by occasionally presenting through the medium of this journal, a summary or digest of the improved views of the pathology and treatment of certain diseases which they exhibit, interspersed with such additional matter, as my own observations and experience may supply. Entertaining this conviction, I may hereafter occupy some portion of my leisure in the execution of this design, and now commence with an account of Diabetes, to which I am more particularly led from the frequency with which, of late, I have been consulted on it, by distant correspondents. Whatever may be the merits or usefulness of this slight sketch in other respects, it will, at least, serve as a source of reference to those who may be desirous of receiving my opinions on the subject, and it is partly with this intention I have prepared it.

This disease, which may be defined a permanent increase, with an alteration in the quality of the urinary discharge, is usually divided into two species, according to the character of the fluid.

1. Diabetes insipidus.
2. Diabetes mellitus.

Doubting this specific difference, some of the late pathologists have been disposed to do away the distinction, while others, of no less authority, maintain that the mellitic is the only form of genuine diabetes. In treating the subject, without absolutely deciding this point, my attention will be chiefly directed in conformity to the latter views.

Thus restricted, the ancients had no knowledge of the disease, so far as can be traced in the records which have descended to us. Notices are to be met with in the works of HIPPOCRATES and GALEN of derangement of the urinary function, somewhat analogous, though still different. Nor does the claim set up for ARETÆUS and the writers of the middle ages, after a proper scrutiny, appear to be much better founded. They also contain some account of exorbitant urination of protracted continuance, without, however, mentioning the mellitic quality of the urine.

An hyperuresis or a mere profluvium urinæ, may occur under a variety of circumstances. But here the urine is little altered, or does not undergo that specific change, or is associated with those general phenomena which constitute real diabetes. The disease described by Aretæus seems, on the whole, to have been diabetes insipidus. Whether the mellitic form of it had no existence in early times, or escaped observation, it is impossible now to determine. Certain it is, however, that it has, of late, vastly increased in Europe, as well as this country, owing probably to the voluptuous habits of the one, and the enormous consumption of ardent spirits in the other section of the world.

It is pretty generally conceded, that we owe to WILLIS the original observance of diabetes mellitus, the publication of which discovery was in 1684, but the progress subsequently made in the investigation of the subject was very slow. Even CULLEN, his cotemporaries, and immediate successors, wrote obscurely on it, and it was not indeed, till the close of the last century, that any clear light was shed, either on its pathology or treatment.

The disease for the most part, is preceded by general derangement of health, in some instances amounting to cachexy, and particularly, by disorder of the digestive and subsidiary processes. This is the representation of most writers, and which corresponds with my own experience. Thus not unnecessarily to cite authorities on the point, we are told by HEBERDEN, "that the disease may be considered as the breaking up of the constitution, and is hardly ever known except in old and infirm people, in whom age or distemper had so far injured some of the parts essential to life, that death must soon have ensued." But sometimes it is otherwise, being found in persons of nearly every age, and comes on without any great previous constitutional disturbance. It is stated by WATTS, in his admirable treatise on the disease, that more than one-half of all the cases which he had seen, and these were numerous, were between the ages of thirty and forty-five, and that the best marked of them, and most rapid in progress were in the prime of life, and when the constitution was supposed to be in full vigour. There is perhaps, continues he, no period entirely exempt from it, though few instances have been recorded under puberty. He has seen, however, one case of it in a boy of three years of age.* But the expressed object of a very late work on diabetes, is to show, that under the guise of tabes, the disease is of very common occurrence in children.†

Be the circumstances under which it occurs as they may, there is leading immediately to or concomitant with the excessive urination, uneasiness in the stomach after meals, with flatulence and sour eructations, though the appetite is rather increased, and occasionally voracious—urgent thirst—the mouth dry and parched—the tongue white and foul, sometimes unnaturally clean and red—tough disagreeable mucus in the throat—depraved taste —dry harsh skin—chilliness, and cold feet—costive bowels, and a sense of heat in them, extending to the stomach—vitiated stools, when procured—pain and heaviness in the lumbar region, with general weariness and aversion to exercise.

Continuing its progress, these symptoms become aggravated, and new ones arise, giving to the case, a more confirmed character. It is now that loss of strength, and emaciation rapidly advance with a tendency to œdema—dyspnœa on the slightest exertion—vertigo—head-ache—eyes muddy and painful—much weight about the præcordia, confused vision—a propensity to sigh—the tongue more coated or florid—the gums spongy and ulcerated at the roots of the teeth—extreme restlessness—occasional cramps and spasms of the extremities—the mind weak, petulant, and despondent with great nervous irritation, attended by anaphrodisia or impotency—and, what is very curious, by redness, swelling, and excoriation about the mouth of the urethra, with phymosis. Not terminating suddenly, which, however, it sometimes does, the disease proceeds, till the system finally is exhausted, by hectic fever with pulmonic affections, or an inveterate dropsy. The pulse throughout, though irritated, or even febrile, is generally weak. As to the urinary secretion, though usually excessive, it varies in quantity from scarcely any increase, to thirty pints in the twenty-four hours, and cases are recorded, where such an enormous discharge was kept up for weeks and months. But, perhaps, the largest quantity that ever took place, was in a case which came under my own observation.* The fluid evacuated, is of a pale straw-colour, of a faint and peculiar odour resembling sweet whey or milk, and of a saccharine or honied taste, in a greater or less degree. Mixed with it, there is sometimes an albuminous matter, analogous to, or a milky fluid very similar to chyle, and occasionally with some clots of blood interspersed. Chemically analysed, the usual saline matters in healthy urine, are found in nearly the same relative proportions with their absolute amount, however much diminished. The proportion of urea, though greatly reduced, is not entirely wanting. By evaporation an extract is obtained in the ratio of an ounce and a half to a pint of the fluid, subject to variations in different instances, and yielding on further resolution, a portion of sugar. These remarks relate to the urine in the mellitic form of the disease, that in the other species is, as the name imports, insipid, quite pellucid, and very little changed in any of its qualities.

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* Watts on Diabetes, p. 10. 11.

† Venables on Diabetes.

The remote causes of the disease, as previously intimated, though in opposition to the opinion of some respectable authorities, seem to me to be closely connected with a decayed and shattered constitution. It is comparatively of rare occurrence among the young and robust, so far as I have seen, is common to the debauched, in the decline of life, especially in such as have been addicted to the use of wine or ardent spirits. Whatever disorders the stomach and its dependencies, seems indeed occasionally to predispose to its production. It has been met with, sometimes in the indigent, from a poor and inadequate diet, exposed at the same time to cold and moisture, with the fatigue of inordinate labour, as happens in the manufacturing establishments of Europe. Certain ingesta may very suddenly excite it, as was exemplified in the case which I have mentioned. The influence of the depressing passions is said to conduce to it, also venery unduly indulged, and in short, all those circumstances calculated to debilitate and exhaust the vital powers. Mercury inordinately used, is alleged to have had such an effect by deranging the kidneys, of which instances are given by BLACKALL in his work on dropsy,[*] and it has been suggested, that acrid and stimulating diuretics, may have a similar tendency. In some few instances, it would seem to be connected with a family predisposition, as noticed by Mr. STORER—and Mr. ISENFLAMM has given the history of seven children of the same parents, who fell victims to it.[†]

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* In the year 1817, I was called, at twelve o'clock at night, to Mrs. B. aged about sixty years, whom I found with a violent flatulent colic, from having supped on cold lamb and sallad. By the ordinary carminatives with laudanum, she was in two hours entirely relieved. As soon as this happened, a copious diuresis ensued, so much so, that the discharge continued almost unremittingly till the next day at noon, when she expired seemingly from mere exhaustion, having in the period of twelve hours, evacuated ninety-eight pints of fluid. Before the attack, her health was good, and from being one of the most corpulent women whom I have ever seen, she became from this excessive *colliquation*, so emaciated, that the integuments hung in folds loose and flabby. No examination after death was allowed, and while I was preparing to have the fluid analysed, it was inadvertently thrown away. Being, however, pellucid and inodorous, the case was probably diabetes insipidus.

As to the diagnosis, this is so obvious from the preceding history, that it might be passed over without any further remarks. The voracity of appetite, the intensity of thirst, the harshness of the skin, the excessive diuresis, the rapidity of emaciation, the sensible properties of the urine, not to mention other phenomena, are all very distinctive. But great ambiguity existing, an analysis of the fluid will determine the point, as well in relation to other diseases, as the species of diabetes itself.

The prognosis is not so easy. Generally it must be considered as a very formidable affection. But the difficulty of controlling it, is much enhanced by the circumstances under which it attacks. Taking place in the old and infirm, particularly as the result of depraved habits, it commonly proves incurable, whereas in other cases, it may be managed with tolerable facility and success.

We are entitled to predict recovery, where with an abatement of thirst, and the craving for food, there is a daily diminution of the urinary discharge, and a more healthy condition of it, the bowels at the same time becoming open with a better appearance of the stools, attended by a correspondent improvement of the skin, exchanging its huskiness for softness and moisture, and with the whole, a gradual renovation of corporal strength and mental energy. The discouraging signs are the reverse of these, and which remaining unmoveable for any length of time, may be deemed as importing sooner or later a fatal issue.

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[*] Vide p. 109. 184.

[†] Good, vol. iv. p. 315.

Examinations after death, in chronic cases especially, show very extensive and diversified phenomena in several parts of the body. The stomach, the small intestines, the pancreas, the spleen, the lacteals, the mesentery, and above all the liver, are sometimes deeply affected in their structure.

Nor are the kidneys and their appendages scarcely less so. The former, in some instances, are flabby, enlarged, and changed to an ash colour, while in others, they exhibit the appearance of increased vascularity, and phlogosis in the coats and in the substance, with a collection of puriform fluid in the infundibula, though rarely or never any ulceration—and the latter, or the bladder, has its coats thickened, and is of contracted dimensions. This concurrent derangement, however, of the chylopoietic viscera, and the urinary apparatus is not uniform. Cases are not unfrequent, where the force of the attack seems to have been directed to the one, permitting the other entirely or nearly to escape. But on the whole, the liver and the kidneys are found to suffer chiefly, and most usually. The lungs, however, are very often found diseased, and which might be anticipated, if the remark of BARDSLEY be correct—that he hardly ever saw a case of diabetes, that was not decidedly marked by pulmonary affection.

In relation, perhaps, to no disease where the phenomena are so little obscured, has there been more discussion as to its pathology, and the conflict of opinion, is mainly on a single point, the primary seat of it, whether it commences in the digestive or urinary organs.

As to diabetes mellitus, I cannot entertain a doubt, of the validity of the hypothesis which traces it to some morbid change in the digestive and assimilative powers. It was SYDENHAM, probably, who first suggested such a view, which was inculcated by Cullen, and has since been extended and ably sustained by

Rollo, in the most elaborate and useful treatise on the disease extant.

Commencing with the proposition, that owing to the imperfection of these processes, saccharine matter is evolved chiefly from vegetable ingesta, he infers that by an increased activity of the lacteal absorption, it is hurried into the circulation, and thence transmitted to the kidneys, to be cast off ultimately by these emunctories with the urine. The affections of the bowels, the liver, the head, the lungs, the skin, the urinary organs, &c. he considers of a secondary nature, wholly proceeding from the disturbed state of the stomach and its dependencies.

Legitimately inductive as these conclusions may seem, the fallacy of them, however, has been exposed in one or two instances, though not to an extent, to subvert, or even materially affect the basis on which they rest. The first, and indeed principal flaw in this chain of reasoning, is the assumption of the mellitic matter being evolved in the stomach, and entering the circulation. No proof did he adduce of its existence in either of these positions, and subsequently the contrary has been shown by repeated investigations conducted by Wollaston, and other skilful chemists. Not, however, to insist on these fallacies, the hypothesis is still defective, in an explanation of the manner in which the enormous elimination of fluid takes place, as well as to some other phenomena of the case, hereafter to be indicated. These are points, therefore, remaining to be illustrated, and which, I think, can be done, in perfect consistency with the fundamental principle of the doctrine. Even this, a little varied, may be sustained. No fact is less disputable, than that a secretory organ may have its office so affected by remote influences, as to vary, modify, or change its product, without any new or extraneous ingredient being in the blood on which to operate. The irritation of rage, or of a splenetic humour, does often so disturb the liver as to cause it to pour out profusely the most acrid gall, productive sometimes of vehement attacks of cholera morbus. An indulgence of similar passions, has not less frequently affected the mammæ of nurses, souring or otherwise vitiating the milk, so that it has most seriously disordered children receiving it. Terror, and other emotions in like manner, are felt by the urinary organs, increasing and altering the appearance and properties of the secretion. Examples to the same purport might be multiplied and varied to nearly any extent. But we will approach the question more closely, and enforce the position by an appeal to an analogy that can scarcely be resisted. What is the received theory in regard to the origin of the several diatheses, which lead, by continuance, to the gravelly deposits. Do not all, at present, admit that they arise from a depraved state of the digestive process, or at least, that they are under the control of certain injesta? What is the result of the extensive observations and inquiries of WILSON PHILIP on this point? They are, to use his own language—

1. That acid or acescent matters, tend to increase the deposition of lithic acid from the urine, and to prevent that of the phosphates.

2. That a diet composed of a large proportion of animal food, tends to lessen the deposition of lithic acid, and to increase that of the phosphates.

3. That dyspepsia tends to increase the deposition of lithic acid, &c.

No function of the animal economy is more under the control of the stomach, and its immediate connections, than the urinary secretions, and as the one, so will the other become affected.

Digestion, in the fullest sense of the term, being sound, the urine preserves its healthy condition. The former, however, becoming otherwise, the latter is correspondently affected, and sometimes a vast variety of new ingredients is found in it, no one of which could have been previously detected in the chyle or blood. Now is it not quite as easy to conceive, that certain states of the stomach may so influence the kidneys, as to secrete sugar, as any of the many elements which enter into the composition of the calculous productions? Why may not this be done, seeing that other matters, requiring quite as an elaborate a process, are produced?

This however, is only one of the phenomena of the disease, and in what way are the rest of the complex series to be explained?

As in most inveterate gastric complaints, the cerebral and nervous systems are here greatly irritated, and when such happens, as we see in hysteria, and from fright, &c. there will be more or less copiousness of the urinary secretion. But inasmuch as the discharge vastly exceeds in some instances the amount of fluids and solids taken as nourishment or otherwise, absorption must go on with astonishing activity. It does so, owing to this same gastric irritation, and to the enormous waste of matter thus induced, is to be ascribed most of the other symptoms of the case, as the pervading sense of emptiness, the voracity of appetite, the vehement thirst, the debility, emaciation, and final exhaustion.

Notwithstanding, however, the excessive renal discharge, it is asserted, that no very sensible, and certainly not a correspondent diminution in the weight of the body is sustained. Though this may have happened for a time, in moderate cases, I doubt it under other circumstances, and assuredly it did not in the extraordinary instance of the disease which I have related, where the most rapid attenuation occurred from waste of substance. The problem has commonly been solved on the supposition, that the system is replenished by fluids absorbed from the skin or inhaled by the lungs. As regards the former, it cannot be true, it having been demonstrated as clearly as any physiological point can be, that no cutaneous absorption exists, and though some supply may be had by the pulmonary organs, it is still inadequate to the end. More probably it seems, that the balance is preserved by the cessation of the perspiratory process. Conformably to the estimates of the best physiologists, six, eight, or ten pounds of fluid, (for the amount is varied by circumstances,) thus escape daily—and, hence, an equal quantity may be discharged by the kidneys without any positive reduction of weight. As to the dryness, and even huskiness of the skin, so conspicuously appertaining to the case, an explication is no less readily afforded. It is an incontrovertible fact, that whenever a high degree of action is concentrated in a part, it is at the expense of that of some other. The mucous tissue of the primæ viæ, having this exaltation of excitement, the skin is invariably robbed of its fair proportion, and falls into collape and dryness. Do we not see this uniformly in confirmed dyspepsia?

The kidneys co-operate to the same effect. They being unduly excited, and secreting profusely, the skin ceases to perform its office, and becomes arid and unperspirable. The two organs may be considered as antagonising, and as one gains, the other loses, perspiration and urination always existing in inverse proportion. The cutaneous surface under the influence of these combined causes, cannot fail to be as it is found in diabetes.

That the liver as well as the lungs, are peculiarly prone to suffer by an extension of gastric irritation, is a fact so universally known and admitted, as to preclude the necessity of any proof or illustration. It might indeed be safely affirmed, that many if not the whole of the hepatic affections, originate in this source, and that a variety of pulmonary derangements, even consumption itself, is occasionally derived from it, can no longer be disputed.

It is only by a comprehensive speculation of this kind, that we can embrace the collection of phenomena, incident to the disease. The theory of Rollo in its original construction, was principally defective in want of scope, from too close a generalisation. Taking the stomach to be previously disordered, and the other affections only a catenated series of morbid sympathies, emanating from it, we shall, I am persuaded, have views of the nature of diabetes, however erroneous in some of the details, that will prove to be essentially sound. But it may be urged, as indeed it has been, why should not this play of sympathies have its commencement in the kidneys, and the whole of the affections be merely secondary and consecutive. The objection has been ably disposed of by Rollo in an argument, which scarcely in justice to it, allows of an abridgment. Briefly stated, it alleges in the first place, that cases have occurred where the kidneys were little affected—that they are never more so, than might be accounted for, by a derivative irritation—and, that the affections are totally different from those which arise from a primary morbid condition of these organs. Not content, however, with this reply, he next proceeds to show that the gastric disorder, an inseparable attendant on the disease, precedes invariably every other morbid disturbance, and that it presents the evidence of an original one—the correctness of which view, is amply established by the practice deduced from it.

Destitute of any settled pathology, the best practitioners for a long period, pursued a course of treatment in this disease, purely tentative and empirical. As might, therefore be expected, we find in the writers on it, till recently, a catalogue of remedies of the most opposite character recommended without any rule or guide to the administration, accompanied with the confession of a general want of success. The first great improvement in the management of the disease, was by Rollo, he who has also the praise of approaching nearest to the true pathology of it.

In contemplating its character, it appears to me, that among some subordinate objects of attention, the great and leading indication, is to rectify the depraved state of the digestive process, from which all the other affections proceed, and here, much of the treatment applicable to dyspepsia will be found suitable.

Early consulted in the case, evacuations of the primæ viæ, should precede every other measure. The stomach being much nauseated, or otherwise distressed, an emetic of ipecacuanha is demanded. By Richter several cases are reported, of the decided advantage of vomiting, and which accords with my own experience. Yet the mild purgatives are usually preferred, as magnesia or rhubarb, alone or united. Combinations of the blue pill with aloes or ipecacuanha are also proper, and where the mucous surfaces are much out of order, answer better.

The alimentary canal having been thus cleansed, these evacuants are to be intermitted, only recurring so far to them, as to obviate constipation. Next tonics and astringents should be resorted to, among which, the Peruvian bark, myrrh, kino, catechu, the preparations of steel, the sulphat and oxide of zinc, and the mineral acids, have been chiefly employed.

Excepting the chalybeates, I have not tried any of these articles, and they unquestionably are. serviceable. The carbonate as the least diuretic I have selected. But lately we have been informed, "that the phosphate of iron proves almost as certain an astringent, on the excessive action of the kidneys, as opium on that of the alimentary canal."* It is ordered in the dose of two grains, gradually increased to a scruple or half a drachm, three or four times a day. Confident from ample experience of its powers, it is advanced nearly in the tone of a specific. I have had no opportunity of making an experiment with it. The alum and kino, particularly, I should think deserving of attention. The first was extolled by Dover, who gave it in the form of whey, and its utility does not want further support. The reputation of the second is perhaps still better established. Ten grains of it, with one of opium, is the ordinary prescription. The celebrated FERRIAR, has strenuously insisted on the superior value of a union of cinchona, uva ursi, and opium, a scruple of each of the former, to half a grain of the latter, thrice a day. But the medicine to which Rollo chiefly trusted, was at first the sulphuretted potash, which he subsequently changed to the hepatized ammonia, exhibiting ten grains of the former, and five or six drops of the latter, morning, noon, and night. What are the merits of either I do not know.

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* Venables on Diabetes.

Might not the saccharum saturni be useful? This is thrown out as a conjecture only, never having tried it. But its general power of soothing the irritations of the primæ viæ, its decided efficacy in dyspepsia with pyrosis, and its control over excessive profluviæ, particularly colliquative perspiration, seem all to concur in recommending this application of it.

Much nervous irritation is a prominent affection in this disease, to allay which, most of the nervines and antispasmodics have been called into requisition, decidedly the best of which, however, is opium.

WARREN has published some very interesting facts in relation to its use,* and common experience attests its efficacy in large doses, at least a grain several times in the twenty-four hours. Much more than this, however, was given by him, who, in one case gradually augmented it from four grains to six grains and a half twice a day, and in another, to five grains four times a day. As corroborative evidence of its utility, it may be observed, that it is an ingredient in nearly every prescription of repute in the disease, whatever may be the properties of the other articles.

As entering into the same design, we should endeavour to relax the skin. The warm bath regularly used at bed-time, is of infinite importance, when the surface is dry and harsh, to be followed by frictions, sometimes with oil. DOBSON strongly urges the bath, and I have witnessed the best effects from it. Diaphoretic medicines are, however, to be brought in aid of it. The antimonials with laudanum have sometimes been directed, though assuredly with less fitness than the Dover's powder, which, on the authority of M'CORMICK, a respectable writer, has done much good.

Extraordinary as it may seem, considering all the circumstances of the disease, venesection is indubitably a remedy of the utmost consequence. It was probably first employed by Le Fevre, as early as the beginning of the last century, who, however, did not succeed in establishing the practice, yet of its great utility few now are sceptical.*

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* Trans. Lond. Coll. Phys. Vol. IV.

Nor according to testimony which we are bound to respect, is it to be limited by those circumstances which ordinarily define, and regulate its use. Thirty years ago, I heard this opinion promulgated by the late professor Rush, who acted on it in practice. More recently it was adopted in Europe, and has become very prevalent in that section of the world. By Watts, in his treatise on diabetes, some cases are recorded of its very liberal and successful employment, where it would appear to have been contra-indicated by a low pulse, loss of strength and spirits, cold œdematous extremities, &c. in one of which instances, an hundred and eighty ounces of blood were, by repeated operations, detracted.

The same course has been pursued by Satterly, and with equal advantage, in evidence of which several cases are published by him, the loss of blood in one, amounting to one hundred and twenty-six ounces.†

It is highly interesting, as enforcing the propriety of the practice, that on each successive bleeding, the aspect of the blood decidedly improved. Dark, like treacle, and without firmness at first, it progressively became better, till it finally assumed a scarlet colour, with slight size on some parts of the surface. Though I have very commonly bled in this disease, I have on no occasion urged the lancet to such an extent. Nor do I believe that it is done in the practice of this city. Ten or twelve ounces at a time, and this two or three times repeated, I have found sufficient for the end I had in view, in the cases which have come under my care.

Topical bleeding is also sometimes demanded. It happens indeed not unfrequently, that much pain with a sense of heaviness exists in the lumbar region, probably from congestion or phlogosis of the kidneys, which by continuance, leads inevitably to structural disorganization. Cups or leeches should therefore be adequately applied, and next a large blister, kept discharging. It may be remarked too, as an additional motive to the remedy, that on the reduction of this local excitement, there is usually a sensible diminution in the urinary secretion.

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* Good, Vol. IV. 328.

† Trans. Lond. Coll. Phys. Vol. V.

Nor is this the only affection which is thus to be managed. Much pain, with soreness and tenderness of the epigastric and right hypochondriac region, attended occasionally by nausea and retchings, sometimes occurs, requiring the same remedies. Equally does pain and oppression of the pulmonary organs, and there are certain determinations to the head, which perhaps might be no less relieved by these applications.

Beneficial, however, as this treatment may be, it will never avail except an appropriate regimen be observed.

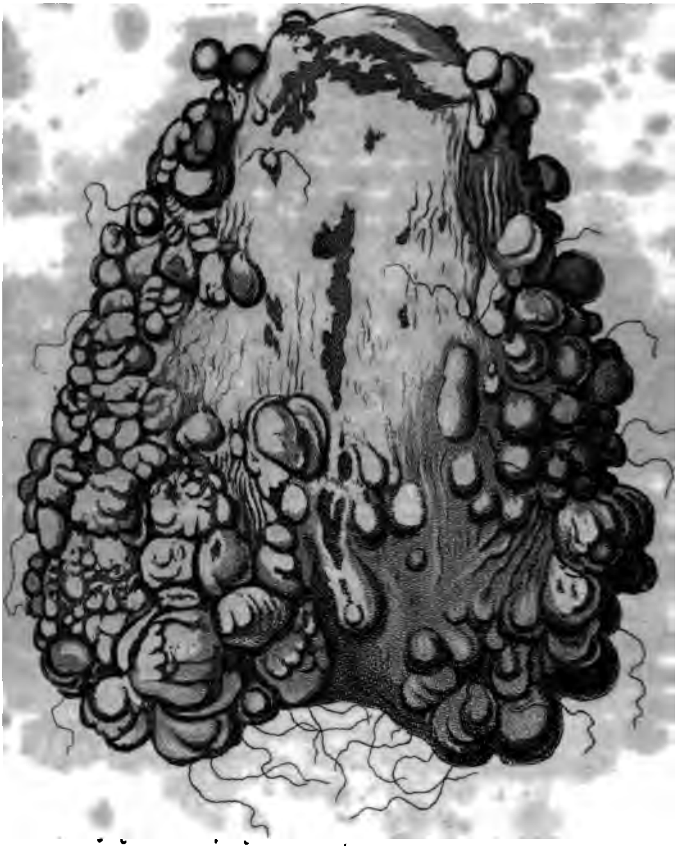
As to diet, there is no longer any difference of opinion. No one now denies the indispensable necessity of its being restricted exclusively to animal matters. Those articles of meat usually recommended in dyspepsia, with the same dietetic rules, will serve equally in this case. Eggs I have found sometimes to answer very well. The only fluid admissible is milk, which perfectly agrees with most persons. Cases indeed are occasionally to be met with, one of which I have lately attended, where it seems alone appropriate. Perhaps in the early stage of every case, marked by any general or local excitement, and which often exists, it should be preferred. Meat, under such circumstances I have seen to do mischief, and particularly in the case to which I have just alluded.

But so pernicious is vegetable matter, that even bread is not admissible.

Concerning drink, as little as possible should be allowed, and this, plain water, or acidulated with the mineral acids—or lime water, or soda water, according to circumstances. By adopting this course and strictly adhering to it, numerous cures have been effected. There must however be no deviation from it. More than once I have seen a single, and very moderate indulgence in vegetable food, or fruit, to bring back the attack, and all which had been gained by a tedious curative process, was in a moment lost.

In relation to exercise there is not the same unanimity. By some, rest is enjoined, while others propose even riding on horseback. It seems to me that this must depend much on the state of the case. The kidneys or other organs being painfully, or

Pa. 355.



UofM

PROF. MOTT'S *case of Calculous degeneration of the Scrotum.*

Drawn by C. Burton. J. Drayton Aq.

otherwise seriously affected, repose is required—while under other circumstances, motion with an exposure to fresh air in a carriage, can hardly fail to be serviceable.

The treatment of this disease has now been detailed. Many of the remedies enumerated, have, probably, under certain circumstances, afforded relief, and deserve to be retained at least as auxiliaries. Excepting, however, the phosphate of iron, not sufficiently tried to be well established—venesection, opium, and animal diet, are those only on which great reliance is placed. It is these, by which, with any sort of uniformity, the urinary secretion is abated, the deposit of saccharine matter diminished, and a general manifest improvement of condition induced. I have only to add, that diabetes is peculiarly retentive of its predisposition—relapses following the slightest exposure. Care is hence to be taken in the avoidance of all its exciting causes, and especially trespasses in eating or drinking—and the influence of cold and moisture.

Art. XIII. *Account of a singular Calculous degeneration of the Scrotum, for which the whole of that part was successfully removed.* By Valentine Mott, M. D. Professor of Surgery in Rutgers Medical College, N. Y. [With a plate.]

In the practice of surgery we frequently observe very singular morbid alterations of texture, which are worthy of being recorded notwithstanding our inability to account for their production. None of the works that we have examined contain a description of such a degeneration as that we are about to describe, nor have we ever met with another instance of a similar kind. It may, therefore, be useful to state the fact, as a contribution towards a more complete history of the morbid anatomy of the scrotum.

In the summer of 1824, I was requested to visit J. R. aged about seventy-three, a wealthy farmer residing upon Long Island. His health had been declining for two or three years, from an affection of his stomach, accompanied, as he stated, with an uncommon disease of the scrotum. The latter complaint had so far increased within the last year, as materially to injure his health, in consequence of an ulceration and very fetid discharge therefrom.

The constant and severe burning which he experienced in the region of the pylorus, with an ejection of the contents of the stomach shortly after eating, together with frequent acrid eructations and costiveness, led to the fear that there was some organic derangement of the lower orifice of the stomach.

As the disease of the scrotum was the particular object of my visit, I requested permission to examine it. It exhibited a monstrous, and to me a very unique appearance, reaching fully two-thirds the length of his thighs, being from twelve to fifteen times its ordinary bulk, and studded, particularly on each edge, it being flattened anteriorly and posteriorly, with several dozen tumours, of a stony hardness, covered with the integuments, from the size of nutmegs to that of a large pea. It resembled an enormous bunch of grapes, or more closely some morbid conditions of the pancreas and spleen, which we have occasionally met with.* The tumours had all a very white appearance, and the integuments of two or three of the largest having been ulcerated for upwards of a year, poured forth a constant and very fetid discharge. At these openings white bodies were seen, which, when touched with a probe, felt of a stony hardness. A white substance resembling mortar was discharging from these openings, which resulted from the crumbling away of the calculi and the combination of this substance with the fluid from the ulcers.

This state of the scrotum was upwards of twenty years duration, and had been gradually increasing, the tumours multiplying as the scrotum augmented in size. The patient knew of no cause to which it could be ascribed.

From its size and weight, as well as the loathsome nature of the discharge, he became desirous to have it removed if practicable and proper. His health being sufficiently good, and the testes appearing to move freely in the diseased mass, led me to recommend that the operation should be performed.

An incision was made around the root or base of the scrotum, beginning on each side of the under part of the penis, at a point a little above the scrotum, so that some integument of this part of the penis in a diseased state, was also removed, and carried down to the perineum, leaving an angular portion of the scrotum below of about an inch in length. Cautiously cutting through the diseased integuments, and the subcutaneous cellular structure, the vaginal coat of each testis was readily discovered and avoided. The whole of the morbid mass was removed by cautious dissection, leaving the tunica vaginalis on each side sound and unopened. Numerous arteries were secured during the dissection, in the integuments, as well as several large ones in the septum scroti.

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* See the accompanying plate.

The perineal portion of the scrotum was susceptible of very considerable elongation, but it was altogether insufficient to cover the testes. A new covering for them, therefore, could only be looked for from the granulatory process. Light dressings of lint, compress, and a T bandage were applied for the first two days, followed by emollient poultices to favour the second mode of healing.

Suppuration and granulation being well established, the new scrotum was increased and fashioned by the use of adhesive straps.

His complete recovery from the operation, and the reproduction of a scrotum, was not interrupted by any circumstance. Three years have now elapsed, and he enjoys excellent health, being occasionally obliged to take, for a week or two, a few grains of the sub-nitrate of bismuth, to remove the affection of his stomach, which, before the operation was performed, threatened to become an organic disease.

BIOGRAPHY.

ART. XIV. *Obituary Notice of* Dr. J. A. MONGES. By J. G. NANCREDE, M. D.

DIED on the 20th of May, in the sixty-ninth year of his age, Dr. JOHN ARMENTAIRE MONGES, member of the Royal Academy of Medicine of Madrid, formerly of the Island of St. Domingo, and for the last thirty-four years, an eminent practitioner of this city.

Dr. Monges was born of respectable parents at Thorembasse, Department of Var, (formerly Provence,) in France. At a very early age, he commenced the study of medicine, under the direction of a physician of eminence of Marseilles, the capital of Provence. Having devoted the usual period to his preparatory studies, he solicited and obtained admission as House Surgeon in the Royal Marine Hospital at Rochefort, where after a short residence, he was induced, in the year 1781, to accept the situation of surgeon to a ship of war proceeding to this country, then engaged in her eventful struggle for independence. It appears that he continued attached to the French naval force, at that period stationed on our coast, until the conclusion of the war, and that he afterwards remained in the United States until the year 1785. It was during this residence, that he performed a journey through the interior of Pennsylvania, &c. to New Orleans, with a view to a settlement in Louisiana; but not finding it suitable to his views, he determined on proceeding to the French West Indies, and arrived at St. Domingo in the year 1785.

This island presented at that period, every inducement which the ardent mind and warm feelings of our lamented friend could desire. Possessed of an agreeable exterior, habitual cheerfulness, combined with great suavity of manners, he soon established a reputation and acquired competency. In the course of about eight years, Dr. M. had become successfully known in an extended neighbourhood, where he was daily increasing his sphere of usefulness, when the desolating insurrection of 1793, drove him with thousands of his countrymen to our shores. Destitute and unknown here, his profession became the means of restoring him to affluence and consideration. Our city was at that period ravaged by the yellow fever, and Dr. M. obtained almost immediately, an abundant share of medical occupation. What contributed perhaps to his unexpected popularity at that moment, was the impression very generally received, that the disease then afflicting us, was brought from the West Indies where the French physicians had had many opportunities of becoming familiar with its most successful mode of treatment. This belief was certainly unfounded; as we have been frequently informed by our late friend, that until his arrival here in 1793, he had never seen a case of yellow fever; and consequently, was as unprepared as any other physician to treat the disease. Nevertheless his success in the management of it, was so great, as to give rise to an unfounded assertion contained in a highly respectable work, lately published in Paris, that "Dr. Monges had visited about three hundred persons affected with yellow fever, and only lost one child."* Upon reading this statement, immediate steps were taken by him, to contradict an assertion so absurd, and its author was subsequently brought to a fair recantation.

For the last thirty-four years, Dr. Monges has been engaged in the practice of his profession, in this city, and it is but justice to his merits, to say, that very few physicians have enjoyed in that interval of time, as large a share of public confidence and of universal respect. The majority of his patients were naturally his countrymen, but he obtained also, the confidence of very many of our most respectable citizens, whose unabated deference to his medical opinions, remained firm to the last days of his existence.

Nature had made him a physician; no man's appearance and manners, were more calculated to command where they did not inspire confidence. His medical judgment, in its rapidity and correctness was most extraordinary, and constituted in his character a feature of great interest, which will long be remembered not only by his patients, but by those of his medical brethren who had occasion to meet him, either in consultation or in conversation. Towards colleagues no one could entertain kinder feelings, or evince more respect for the puntilious rules of medical ethics. A foreigner by birth, he early imbibed our national feelings, and identified himself at once with the country of his adoption. It was impossible to feel more warmly or express more energetically than he did, the gratitude which the unfortunate refugeés from St. Domingo owed to the liberality of the citizens of our republic. This was a favourite theme, on which he never could descant too freely. When we turn from his public or professional life, to view him in his domestic circle, surrounded by his children and friends, we find him the same man of warm feelings, and though for many years condemned to a life of torture, still he rarely complained, and had always a smile at command. Time, the universal comforter who effaces impressions on animate as well as on inanimate objects, may assuage the grief his departure occasions, but time cannot fill the vacuum his death has caused, or restore to his children, and to society, the kind protector—the revered benefactor they long will mourn.

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* Dictionnaire des Sciences Medicales. Tome. xv. page 362.

To his profession the successful career of Dr. Monges, offers the rare, though encouraging example of a good man and a respectable physician, who, supported by his industry and merit alone; without the adventitious aid of wealth, of family influence and connexions, or of sectarian patronage, attained the highest standing in his profession, and secured to his memory the approbation of the just.

As the disease to which the subject of these observations had long been a victim, presents some features of pathological interest, to those who knew him, it is thought proper to state cursorily, its prominent symptoms, with the result of the examination after death.

In the winter of 1798, Dr. Monges became affected with pneumonia, which, as we are informed, was not so considered at first, but at the end of five days only, being recognized as such, was treated accordingly, by venesection and other antiphlogistic means. It had, however, become too late to combat the disease successfully, and it gradually assumed a chronic form. The lungs were frequently the seat of renewed inflammations, but the patient was never free from cough and expectoration, and though he was in the constant habit of wearing blisters over the diseased region, yet bleeding, dry and scarified cupping, were frequently indispensable to remove the increase of internal irritation, to which he became liable on almost every vicissitude of atmospheric influence. In fact, for the last twenty-nine years of his life, scarcely a winter elapsed without his being confined to his bed, by a renewed attack. By great care, aided by frequent depletions, constant and powerful external irritation, and these occasional abstractions from his laborious profession, Dr. M. contrived to lead a life which might almost be termed artificial. His cough was constant, though not as incessant during the summer months, as in winter, but his extraordinary and unexampled expectoration, which was unabated by depletion, or the increase of any other secretion, and which in fact, having lasted for so long a portion of his life, might be considered as a new secretion, which the system required, still remained a most astonishing characteristic of his disease. Every year increased the duration, as well as the violence of the attacks, until latterly he found it necessary to retire altogether from his profession. In the course of the last winter, his symptoms became much more alarming; his appetite which had hitherto been unimpaired, now abandoned him, and for several weeks previous to his decease, a complete disgust for all kinds of nutriment, made its appearance, œdema finally supervened, followed by death in the latter part of May.

In conformity with his wishes, an examination was made in the presence of four of his medical friends. On opening the thorax, about a quart of water escaped from the left cavity, the corresponding lung being perfectly healthy. The right cavity, on the contrary, which had during life been the seat of great irritation, exhibited much disease. The upper half of that lung had undergone a complete change in its colour and texture. It had acquired the consistence of liver, but was of a much darker colour, and presented in its hardened substance, several cavities, generally of the size of a hickory nut, filled with a matter similar to that which had been so copiously expectorated during life. The air cells were completely obliterated, and no crepitation could be discovered; of course breathing had long ceased to take place through this portion of the lung, which was so strongly connected by adhesions to the surrounding pleura, as to require frequent use of the scalpel to remove them. The lower part of this lung was materially different in its aspect; air cells and crepitations existed here, but there were here also, appearances of recent and acute, but not very severe inflammation. On cutting into it, a red fluid often met with in congestions of this organ, was freely emitted. The heart, larger and softer than usual, was surrounded in the pericardium by a small quantity of water. Its surface presented a granular substance resembling sand, which was easily scraped off by the knife. The stomach also partook of the inflammatory diathesis, and exhibited, besides the traces which characterise it, a peculiarity rarely before noticed.* This was an extreme thinness of its coats in several places, about the size of a dollar, amounting to complete transparency. The several coats had not disappeared, but apparently had each lost a portion of its thickness; in other words, it might be thought to have been stretched in those places by some unusual weight. The liver was natural, as well as the large intestines, but the smaller ones presented a large quantity of mucus, and symptoms of an inflammatory character.

Having exhibited this short statement of the disease, with the appearances presented after death, we are led to some brief remarks, which we think will very naturally occur to those who read this case.

In the first place, it must appear to all a subject of surprise, that a disease of this character should have lasted for so many years without causing greater disorganization of the lungs. One quarter only of their whole substance had ceased to exist as lungs, and this portion had become the seat of an expectoration, which, considering its duration, and the active habits of the individual for so many years, might more properly be termed a new secretion, essentially necessary perhaps to the due equilibrium of the animal economy. Perspiration for many years had become extremely rare; in the warmest days of summer, though covered with flannel, it was to him an unusual visitor. As long as he was enabled to walk with some degree of strength, no œdema was perceptible, but after his long confinement during the last winter, it made considerable progress and even reached the abdomen. Towards spring, increased difficulty of breathing and other concomitant symptoms, induced him to announce the presence of hydrothorax. Subsequently he complained much of pain in his right side, and once more resorted to his usual custom of dry cupping. His difficulty of breathing and expectoration, became more and more difficult until his death. Was it the new inflammation of the lower part of the right lung, which superadded to his former disease occasioned death, or are we to look for it in the inflammation of the stomach, which, accompanied by great disgust for food, extreme irritability, and profuse serous diarrhœa, might have occasioned death by inanition? Finally, what agency are we to assign to the effect of hydrothorax?

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* Described by *Louis*. Memoires ou Recherches anatomico-pathologiques sur le ramollissement avec amincissement, &c. de la membrane muqueuse de l'estomac. Paris, 1826, 8vo.

BIBLIOGRAPHICAL NOTICES.

1. *A Treatise on Special and General Anatomy.* By William E. Horner, M. D. Adjunct Professor of Anatomy in the University of Pennsylvania, 2 vols. 8vo. Philadelphia, 1826.

We concur in the remark of a contemporary writer, that "it is by no means easy to write a good book of practical anatomy." Difficult, however, as it is acknowledged to be, our author has achieved his task in a manner, at once creditable to himself, and to his country. He has shown to the medical public, what, indeed, was well known to his intimate friends, that he possessed all the preparatory knowledge and necessary qualifications for this important literary enterprise.

Previously to the publication of these volumes, there was not in the English language, a good treatise on descriptive anatomy. Bell's work, which has been long considered the most authoritative, abounds in errors and obscurities, and is characterised by a looseness and flippancy of style, wholly incompatible with the subject of which he treats. There have been a number of valuable recent contributions by the English and Irish anatomists, but being limited in their sphere, and having no pretensions to a system, they have not rendered a general treatise the less a desideratum.

The valuable work of our own Wistar, gave a faithful view of the science of anatomy as it was taught when he wrote, yet it is far from exhibiting a fair exposition of the opinions now entertained. The invaluable views of Tiedemann, Meckel, Cloquet, and other continental anatomists, have rendered it necessary that we should revise and correct our previous knowledge, and to incorporate their facts and suggestions with our present systems. Our author has ably performed this duty. He has noticed most of the labours of contemporary anatomists—has faithfully recorded every *well settled point* in the science, and has presented, indeed, the state of special anatomy, as it exists at the present period.

This treatise may be considered, it is true, a mere outline of the science, though it is sufficiently full for all the purposes of the student. Had the author entered into an examination of all controverted points, it would have swelled the work to twice or thrice its present magnitude. However curious and interesting such a work might be to the advanced student, it would not be profitable to the novice, nor therefore suitable for a text book, which should contain little more than a record of established facts and opinions.

To the contributions of others, which our author has faithfully embodied in his work, he has added several of his own. Though they may not be considered of great practical utility, still they are creditable to the author, inasmuch as they discover accuracy of observation, and an ability for minute investigation. The most unimportant discovery, in a tract so long and repeatedly traversed, may be considered an achievement, of which the most distinguished votary of the science may well be proud.

T. H.

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2. *Review of the diseases of Dutchess County, (New York,) from* 1809 *to* 1825, *and an Essay on a disease of the Jaw Bones.* By Hunting Sherrill, M. D. late President of the Dutchess County Medical Society.

The matter contained in this volume, was prepared as the subject of two addresses read before the Dutchess Medical Society, at their annual meeting. The author takes a view of the diseases which appeared in his particular neighbourhood, where the different forms of fever presented themselves in all their variety. Their symptoms, causes, and progress, are detailed in a manner which evinces patient and accurate investigation, and the treatment he recommends appears to us to be judicious, and is that supported by standard professional works.

In speaking of the mercurial action upon the mouth, our author considers cathartics as tending to increase the violence of the salivation; he therefore dissuades from their use, and recommends the internal use of opium, to allay irritation; and to wash the mouth with gargles.

Puerperal fever prevailed at one time, the two first cases were treated in the ordinary mode by venesection, cathartics, and sudorifics, and both proved fatal. Discouraged by this want of success, Dr. S. adopted the plan recommended by Armstrong, of giving large doses of calomel and opium to allay pain and morbid irritation. He thus speaks of his mode of treatment. "From twenty to sixty ounces of blood must be taken away during the first twenty-four hours. After the first bleeding give calomel, ipecacuan, and opium. Let there be opium given to quiet all pain; say three grains at first, and one or two to be repeated every three hours until it has that effect, and ipecacuan and calomel enough to nauseate and insure a cathartic operation in due time, with the aid of some laxatives." Sinapisms and blisters are also recommended. In one case which terminated favourably in three days, the patient lost thirty-six ounces of blood, took forty grains of calomel, twelve of ipecacuan, ten of opium, and three hundred drops of laudanum.

We have perused this book with pleasure. It recommends itself in the first place, as the work of an American physician, and, as one of a strictly practical character, drawn up by a practitioner, residing in the country and applying himself with diligence to investigate the character of the diseases which prevail in his neighbourhood. Should the example set by Dr. SHERRILL be followed by others, it will be the means of rendering valuable contributions to the knowledge of the diseases of our own country. P.

3. *Discourses on Cold and Warm Bathing, with remarks on the effects of Drinking Cold Water in warm weather.* By JOHN G. COFFIN, M. D. Second Edition, 8vo. Boston, 1826, pp. 70.

Dr. Coffin deserves the thanks of the community for this useful pamphlet, in which he sets forth the beneficial results of warm and cold bathing. He gives at the same time ample directions as to the manner in which the warm and cold bath should be employed, and without displaying any wish to be considered as aiming at originality, his remarks are uniformly judicious and interesting. He writes on the subject like one who has been experimentally convinced of its importance; and we believe that his observations may be read with advantage both by physicians, and patients. We are always gratified to see men of practical knowledge, especially among our own countrymen, laying the results of their experience before the profession, and shall never lose an opportunity of giving all the furtherance in our power to their laudable exertions.

4. *Manual of Descriptive Anatomy of the Human Body, Illustrated by 240 Lythographic plates.* By JULES CLOQUET, M. D. Assistant Surgeon to the Hospital of St. Louis, Associate Professor of the Faculty of Medicine of Paris, and translated by JOHN D. GODMAN, M. D. &c. Boston, W. & J. Pendleton, 4to. 1827.

This work by the justly celebrated Cloquet has received a great deal of attention in Europe in consequence of the accuracy and beauty with which the parts of the human body are delineated. These engravings are accompanied by a descriptive text, which is clear, concise, and satisfactory, presenting without unnecessary words, a fair view of the existing state of Anatomical Science.

As an assistant to practitioners and students of medicine, remote from opportunities of the studying practical anatomy, or as an immediate guide to this important study, this work will be found a most valuable acquisition.

The trifling expense at which it is furnished in the American edition, notwithstanding the neatness with which it is executed, is not a small advantage. A single or double number, as may be convenient, is to be published until the whole work or forty numbers is completed. The price is one dollar for each single number, payable on delivery.

5. *De Iridodyalisis Operatione, Instrumentisque in ea adhibendis.* Diss. Inaug. Medica. Auctore Augustus Davides Krohn. Berolini, 4to. 1826, cum 3s. tabulis, pp. 35.

This essay on the operation for artificial pupil, contains a well written account of the causes producing the condition which the operation is designed to relieve, with a statement of the various modes of operating, and a description of the instruments used by different surgeons.

"The four principal modes of operating heretofore proposed are:—

1st. An incision of the iris is made according to the radiated direction of its fibres, or the fibres themselves are cut from the vertex. (*Iridotomia, Coretomia.*)

2d. A little cone of the iris is raised and removed by excision. (*Iridectomia, Corectomia.*)

3d. The ciliary margin of the iris is separated from the ciliary ligament. (*Iridodyalisis, Coredialysis.*)

4th. The natural pupil situated opposite the opaque part of the cornea, is transposed so as to be brought opposite the transparent portion; as this cannot in any way be done without a prolapsion of the iris through the wound of the cornea—this operation is called *Iridoencleisis.*"

The author prefers the operation called Iridodyalisis for the following reasons.

"1st. The small or pupillary circle of the iris and the adjoining part of the greater or ciliary circle are uniformly the parts first affected in Iritis. Being throughout the course of the disease liable to the greatest changes of structure, subsequently these parts are by the wound caused by the incision or excision inclined to renewed inflammations and changes of structure. Whence it happens that the artificial pupil becomes finally blocked up and rendered impervious by coagulable lymph. Iridodyalis acting upon the larger circle of the iris is therefore to be preferred to operations first and second.

2d. The pupil formed by Iridodyalisis is therefore not so readily obliterated by exudation of lymph, since lacerated wounds of the iris are not so much inclined to pour out lymph as those produced by incision or excision. Iridotomy or Iridectomy, therefore, should only be employed in those cases originating from disease of the cornea, in which the iris is neither very vehemently nor very generally inflamed. But even in this state of things not without circumspection; the principal condition necessary to cause the iris sufficiently to resist the knife being the direct tension of the iris concreted at some part with a staphyloma or ulcer of the cornea. Lesion of the crystalline lens will be sufficiently avoided by iridectomy.

3d. Iridotomy appears to be preferable to iridectomy chiefly in this, that while by the latter, the eye is only to be opened in one way—by iridotomy there are two ways of penetrating the eye through the cornea and sclerotica. Iridodyalisis already preferred to iridotomy, for other reasons agrees with it in this respect, and therefore is still further recommended by the extensiveness of its applicability.

4th. When the crystalline lens is perfect, and it is our object to spare it as much as possible, lesion cannot in any way be avoided by iridotomy or iridectomy, if the operation be performed through the anterior chamber. The anterior surface of the crystalline lens at its central part, if a fixed point be imagined in the centre of the pupil, according to the dimensions given by Soemmerring, will at most be the fourth of a line distant therefrom. But as the lens describes a curve from its centre towards the ciliary processes, the greatest space is where the lens and ciliary processes are most distant from the uvea. When these circumstances and the modes of operating are considered, it will be easily perceived which operation is most dangerous, or is most to be preferred, without adverting to the fact that the lens may be prevented from protruding by a peculiar artifice, in iridodyalisis."

For an account of the operations, we must refer the reader to Dr. Frick's work on the eye, heretofore analysed in this journal, which every American practitioner ought to possess, who is desirous of becoming acquainted with German Ophthalmology.

It is scarcely possible to read the excellent inaugural dissertations, published by the graduates of various European Schools of Medicine, without regretting the disuse into which the practice of publishing inaugural dissertations has fallen in this country. We are not inclined to wish that all that are now *written*, should be *published;* but if it were *the rule*, that dissertations should be published, there is no question but that they would be written very differently from what they are at present, and that students would be more solicitous to *qualify* themselves for the undertaking. It is true, that we have occasionally excellent papers prepared and written by our graduates, although they are not obliged to publish; but it is notorious that a large proportion of them are far below mediocrity; nor is it very probable that it will be otherwise, so long as the dissertation is regarded as a mere part of a ceremony.

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6. *De Scirrho et carcinomate uteri, adjectis tribus totius uteri extirpationis observationibus*. Auctore Ed. Casp. Jac. De Siebold. Berolini, MDCCCXXVI. accedit tabula Œnea. 4to. pp. 47.

This perspicuous essay is rendered very interesting, by the account of three cases in which the whole uterus was extirpated, without benefit to the patients, and, in our opinion, without adding much honour to the profession. It is unquestionably the duty of surgeons to interpose the resources of the art, even at some hazard of reputation, where the probability of continuing life or restoring health, is to be increased by an operation; but, to operate under circumstances, where from the nature of the parts diseased, or the condition of the patient, no hope of success be entertained, implies a degree of temerity, or of moral obtuseness which the operator is very little to be envied. We shall sketch from

Dr. Siebold's dissertation, some of the particulars of these cases, in order that the reader may decide in what degree the same kind of operation is to be approved or reprobated, in cases of similar character.

Case 1st. Woman aged thirty-nine; middle sized; of delicate constitution and lax fibre: married when twenty-one years old; bore ten children, which were all nursed by herself. All her parturitions were effected without manual or instrumental assistance, though needed in some instances; during her puerperal and nursing periods, suffered much sickness. Fourteen days previous to her application for assistance, blood was discharged from the vagina, accompanied by excruciating pain; the hæmorrhage diminished two days afterwards, but never entirely ceased; this discharge and the pain was greater at the menstrual than at other periods. Appetite failed; strength greatly prostrated; could not leave her bed; was sleepless and had fever for two months, with evening exacerbations; the pain, especially in the right side, increased daily; discharge of blood and fetid sanies from the vagina, continually. Medicines afforded no relief.

When she came under the care of Professor Langenbeck, in the hospital of Goettingen, her face was exceedingly pallid, her eyes without lustre, and the whole visage collapsed. The pulse was feeble, and from ninety to one hundred in a minute; hands and feet were moist with perspiration; at night, other parts perspired freely. The fever remitted in the morning. The appetite was entirely lost; thirst excessive; bowels constipated, only to be moved by the use of clysters, which brought away some scybala, as hard as if they had been baked. Repeated examinations gave the following results:—belly rugous and painful when touched, especially on the right ride; the sensation of heat was retained by the hand for some time after the examination. The vagina was enlarged, and discharged a large quantity of mucus mixed with blood. Two scirrhus protuberances were found near the mouth of the uterus; the mouth of the uterus, in the middle of the aperture of the pelvis, was so much degenerated as scarcely to be discoverable, forming an unequal tuberculous soft mass, and the internal surface of the womb was studded with similar tubercles. Examination caused excessive pain, and the discharge of a most excessively offensive fluid. From the rectum two hard masses were felt, which gave great pain when touched. From all circumstances it was concluded that the uterus was in a state of open cancer. Opium, in considerable quantity, was administered to alleviate pain.

Professor Langenbeck resolved to extirpate the uterus by an operation similar to the *Cesarean section*. On the 11th of January, in presence of Professors Conrad, Marx, Mende, and Osiander, and a crowd of students of medicine, he operated in the following manner. The rectum having been previously evacuated by an injection, the patient was placed with the pelvis raised higher than the rest of the body; a catheter was introduced into the bladder, and a sort of speculum into the rectum, bot which were held by an assistant. The operator standing on the left of the pelvis, made an incision through the linea alba from the symphysis pubis to within two inches of the umbilicus, and finally, into the cavity of the belly, cutting through the peritoneum. An assistant then introduced his left hand, and pressed the bowels out of the way, while with his right, he endeavoured to hold the bladder against the symphysis pubis. The operator took hold of the uterus with his left hand, while with the right, he introduced a long pair of forceps, made for the occasion, and having taken hold with this instrument, he began at the right ovarium, and thence dissected out the whole uterus together with the scirrhosities of the vagina, completing the operation in seven minutes. No blood flowed from the vagina, nor was there any prolapsus of the intestines, although the finger could be passed from the cavity of the belly, through the vagina. At the suggestion of Professor Mende, the wound was brought together by very long strips of adhesive plaster; a sponge was left in the vagina, a bandage applied to the abdomen and the patient put to bed. The uterus, especially its right side, was found to be greatly eroded by the cancer; the os uteri destroyed by deep and foul ulcers, and the portion of the vagina removed with the uterus, was in like manner diseased. The patient sunk rapidly after the operation; the face became more and more collapsed, and the pulse throughout the whole day was very quick and small. She drank chamomile tea to allay her thirst. In the evening cold sweating of the head and chest; and at nine P. M. she took *Dover's powder*, but obtained no sleep. The sweating and the excruciating pain continued: no urine had then been discharged after the operation.

Next morning the patient took *two grains* of musk, but immediately rejected it, and the vomiting continued more or less during the day, and could in no way be allayed. The pulse could scarcely be counted. The use of the catheter brought away but a small quantity of urine. Finally the patient died at five P. M.

Dissection by Dr. Reuss.—Peritoneum covered with coagulable lymph, which even united the intestines with each other and could be drawn out into long threads; bowels were red, inflamed, and inflated, especially the smaller portions. In the cavity of the pelvis a great quantity of coagulum was found, especially on the right side. The urinary bladder was gangrenous and easily torn, especially at the fundus. *But*, (adds the author,) all the schirrus parts were cut out.* No marks of disease were found in other organs.

Case 2d. Was in the main like the first, and requires no detailed description. Professor Langenbeck in this instance resolved to operate from the vagina. He did so, doubtless with great dexterity, at eight o'clock in the morning, and at half past twelve of the same day, the patient died, being effectually *relieved*, in four hours.

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* "Partes vero scirrhosæ omnes erant exsectæ."

Dr. Siebold dissected this body, and did not find very obvious signs of inflammation in the peritoneum or intestines—however, coagulable lymph like that caused to be effused by inflammation covered all parts, united the intestines, and in the cavity of the belly remote from the intestines a great quantity was found. Neither the rectum nor bladder were wounded: the latter was black and thickened. Much coagulated blood mixed with lymph was found in the cavity of the pelvis.

In the third case, Dr. Siebold's father, the distinguished professor of obstetrics, operated upon a patient of thirty years old, removing the uterus by cutting from the vagina. We have not room, to say nothing of patience, to give the whole of this case. Professor Siebold cut the womb out in twenty minutes, &c. "Her countenance changed *wonderfully* as soon as the vagina was cut: for, from possessing great firmness previous to the operation, the cutting out of the uterus so much affected her mind that she could scarcely be recognized as the same person!" *Wonderful* indeed! and only to be equalled by the unaffected earnestness with which it is related by the author of the dissertation.*

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7. *Beskrivelse af et nyt underbindings Instrument.* Ved LUDVIG JACOBSON, M. D. et Prof. Kiobenhaven.

Description of a new Instrument for securing Arteries. By Professor LOUIS JACOBSON, of Copenhagen.

Of this instrument we have already given a description from Ferussac's Bulletin; the work above named is the original account of it by the author. We hope hereafter to have frequent opportunities of making our readers acquainted with the scientific labours of this distinguished man. Of his success in the prosecution of comparative anatomy, ample evidence is afforded in his paper on the discovery of a new set of veins going to the kidneys of animals, as the veins of the intestines do to the liver, a translation of which will be found in Vol. VI. p. 87, et seq. of this Journal.

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* "Mirum in modum ex eo tempore, quo vagina incidebatur, ejus facies mutata: quippe quæ ante operationem summa constantia esset prædita, *utero exsecto tali modo mutavit animum, ut vix cognosceretur eadem.*" p. 40.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

ANATOMY.

1. *On the existence of a canal in the optic nerve of the human fœtus.* By Dr. **Wedemeyer.**—In dissecting, in 1816, a human fœtus of five or six months, and on examining a portion of its optic nerve, which he had taken out of the orbit, Dr. Wedemeyer observed that on pressing slightly upon the globe of the eye, the vitreous humour escaped through that part of the optic nerve that had been cut. He examined other fœtuses with care, and thought that he saw, in the centre of the cut end of the optic nerve a black point, and in this point a round opening, by which, on slight pressure, the vitreous humour flowed out, even when the cut end of the nerve was half an inch in length. He then sought this opening in the interior of the eye, at the termination of the optic nerve, and he remarked at the centre of its expansion, (de son epanonissement,) an obscure point of an annular form. In the rest of the nerve to the brain he could not verify the existence of a similar canal.

Distrusting his own observations, he communicated them to Dr. Albert, and through him to Dr. Treviranus. The last thought that the canal in the optic nerve was produced artificially by the pressure which had been exercised on the globe of the eye. Nevertheless Dr. W. did not neglect to make new observations, hoping always to confirm the truth of his researches. He has proved since that when the embryo has passed the seventh month, this canal cannot be perceived, and in the fœtus of four months, the softness of the nerves do not permit observations to be made on this subject.

Whilst occupied in these researches, Dr. Wedemeyer read those of Sœmmerring, which prove the existence of a cavity in the olfactory nerve of the fœtus, and its communication with the brain in the inferior vertebral animals, thus demonstrating that in the human fœtus, as in the inferior animals, the tubercula quadrigemina, from whence the optic nerves in part derive their origin, are hollow, and communicate with the third ventricle; that in the human fœtus, and in all other vertebral animals, the spinal marrow is also hollow; finally the observations of Carus, (*Darstellung der nerven systems,* Leipzig, 1814, p. 70, 75, 106, 195,) which shows that the development of nerves is similar to that of vessels, and that at their origin they are hollow; all these observations tend to confirm Dr. Wedemeyer in his opinion, that the optic nerve is really hollow in the fœtus.

Dr. Wedemeyer has not had an opportunity of making new observations on this point, but he announces his discoveries to excite anatomists to investigate the subject. He is not ignorant that a French anatomist, Mr. Bogros, is of opinion, that all the nerves of the human body, even the ganglions are hollow.

It would result from the anatomical structure above noticed, that in the fœtus the interior of the eye communicates with the cerebral cavities, by the canal of the optic nerve; that the vitreous humour, by its fluidity, is analogous to that which then fills the cerebral cavities; that the hyaloid membrane is perhaps a continuation of the arachnoid; and that it is by the gradual closure of this canal in the optic nerve, that the separation is effected between this membrane and the interior of the globe of the eye exactly as the separation of the tunica vaginalis of the testicle and the cavity of the peritoneum is affected. An examination of hydrocephalic individuals might perhaps throw some light on this subject.—*Journal des Progres des Sciences et Institutions Médicales, from the Journal für chirurgie und augenheilkunde, von Walther und Graefe,* 1826.

2. *Sir Astley Cooper's Observations on the Anatomy of the Nails.*—When the nail is separated by putrefaction, and its internal surface examined, it is found to be divided into three parts, viz: 1st, a hollow and nearly smooth white surface, at its root; 2dly, a hollow white laminated surface, in its middle; 3dly, a hollow, brownish, and less distinctly laminated portion, near its extremity.

The ungual surface beneath the nail "is divided into two parts. Opposite to the hollow at the root of the nail is placed a highly vascular and villous surface, which I call the ungual gland, and the portion of the nail over this surface is thinner than the rest. Beyond this secreting surface appear a number of laminæ, like the under part of the mushroom, which are parallel with those placed in the inner part of the nail, and which pass in the direction of the axis of the finger. The parts of the nail usually cut project beyond these laminæ.

"The ungual gland is a very vascular surface, and its use is to secrete the nail, which proceeds from it between the laminæ placed before it; so that the nail grows from its root, as may be easily seen by cutting a notch there, which grows gradually out in about three months, advancing until it reaches the extremity of the nail. The growth of a new nail also illustrates this position.

"The laminæ situated anteriorly to the secreting surface, and upon the third phalanx of the finger, are highly vascular, as far as the adhesion of the nail extends; but beyond this the cuticle of the end of the finger turns in to unite itself to the laminæ. Their vessels are arteries and veins, the latter of which form a plexus, with very frequent communications. The nail adheres to the finger by the cuticle, and it therefore separates by putrefaction and boiling: it also adheres at its root to the secreting surface which produces it; and, above all, it adheres by its laminæ being received between the living laminæ beneath. Opposite to the root of the nail, the cutis and cuticle are double, and turn inwards; so that a considerable portion of the nail is covered by the common integuments. The cuticle unites to the nail; the cutis passes under it, to produce the secreting surface and laminæ,—it is vascular and villous, that it may secrete the nail; vascular and laminated, in order to produce the adhesion of the nail to the skin."—*London Med. and Phys. Journ. April,* 1827.

3. **Watson** *on the Structure and Connections of the Vitreous and Crystalline Humours, their Capsules and Attachments.*—"The vitreous humour i

does not appear to have any vascular connection with the retina, unless by a branch from the arteria centralis retinæ. The chief blood-vessels from which the humours of the eye are supplied, pass along the coats of the eye to the anterior of the eye-ball. The ciliary body and processes have not only all the other parts of the eye connected to them, but they form a sort of centre to which the blood is sent for the supply and maintenance of all the internal parts of this organ. The ciliary processes are more highly vascular than any other part of the eye. When the arteries of the eye are injected, these processes become completely coloured by it. But the probable function of these ciliary processes in the eye has not yet been satisfactorily established. Like the *pia mater* of the brain, their doublings, or plicæ, seem to form an increased extent of surface for the more minute subdivision of the blood-vessels, from which the humours are secreted and nourished.

"Covering the anterior part of the smooth transparent capsule, or hyaloid membrane of the vitreous humour, for the space of rather more than an eighth part of an inch around the crystalline lens, there is a more dense and thick membrane than the hyaloid, which has been called the *zonula ciliaris*, the *zonula Zinnii*, or the *corona ciliaris*. This membrane is formed into small doublings, or plicæ, resembling the ciliary processes; and hence they have been called the ciliary processes of the vitreous humour. The ciliary processes, or rather the pigmentous membrane covering their internal surface, is firmly attached to the zonula ciliaris, the depressions of the one corresponding to the eminences of the other, so that the number of these is the same in each. The zonula ciliaris may be easily separated from the vitreous humour by inflation; and when thus inflated, it constitutes the anterior part of the canal of Petit.

"The crystalline lens, surrounded by its own proper capsule, is set into the anterior part of the vitreous humour, as if into a cup, having its posterior half imbedded in this humour. The posterior surface of the capsule of the lens is closely attached to the anterior part of the hyaloid membrane, which forms the cup into which it rests. Whether this intimate union is formed by cellular membrane, or by vessels, is uncertain; but it is probably in part by both. From this attachment to the hyaloid membrane, the capsule of the lens may be separated without either of them being injured.

"In my dissections, I have long anxiously looked for a continuation of what has been termed the capsule of the aqueous humour, over the anterior part of the capsule of the lens, expecting to have found in reflected from the root of the iris, but have not yet been so fortunate as to see it. I am convinced its existence in the human eye can only be a matter of inference from analogy, not from direct demonstration.

"Connecting the ciliary processes with the capsule of the lens, however, I have observed a complete circle of minute radiant semi-transparent lines, which I conceive to be the principal vascular connection between the capsule of the lens and its neighbouring parts, and from which the lens and anterior part of its capsule derive their nourishment; the posterior part of the capsule probably deriving its nourishment from the hyaloid membrane, for reasons afterwards to be mentioned.

"The extremities of the ciliary processes are not in contact with the capsule of the lens. This is easily demonstrated by the anterior half of an eye being held up between the observer and the light; a distinct ring of light will be seen surrounding the lens, between it and the ciliary processes: or the cornea and iris may be carefully removed, and the space between the anterior extremities of the ciliary processes and the capsule of the lens will be distinctly seen. Stretching across this space, what I conceive to be the vessels of the lens, may, with a clear sunshine light, be seen after the part has been rendered opaque by immersion in spirits. These vessels seem to pass from the ciliary processes to the capsule of the lens, and are inserted into it at a short space anterior to its external margin. I have in my possession a preparation made by removing the lens inclosed in its capsule from the vitreous body, after a certain degree of decomposition, in which the vessels have remained attached to the capsule, from the margin of which they float like radiant lines. I have similar preparations of the vessels of the retina. The medullary part being washed carefully away, the vessels and their ramifications remain. In the eye of the ox, the vessels described as going to the capsule of the lens may be injected. I have deposited, among others, a preparation showing this in a most distinct manner, in the Museum of the College of Surgeons.

"The vitreous humour, though apparently of a viscid consistence, is equally fluid with the aqueous humour. But the vitreous humour is contained in a very fine cellular texture, made up of processes sent through it from the inner surface of the hyaloid membrane, which causes it to have the apparently viscid consistence. When the vitreous humour removed from the eye has its tunic ruptured at any part, the whole of the fluid flows out from its containing cellular membrane, showing that these cells communicate freely with each other. These cells prevent the undulation of the aqueous fluid forming the vitreous humour, which might alter the form of the eye and the focus of vision. When these cells are destroyed by disease, the iris undulates backwards and forwards, and vision is indistinct. This, as well as other subjects upon which pathology throws considerable light, will be afterwards noticed.

"The attachment between the crystalline lens and its capsule, must be extremely minute and delicate. For when the capsule is ruptured, the lens is very easily expelled from it, the elasticity of the capsule being almost sufficient for this purpose. As the vessels connecting these parts, even after the most successful injections of the eye, have been seen only by very few anatomists, their existence has been doubted.

"That vascular connections really exist between the lens and its capsule, though they cannot be seen, may reasonably be inferred from the consideration of several facts. 1st, That no part of the animal frame is nourished in any other way but by vascular connection. 2dly, The regular form and beautiful organization of the lens in concentric layers. 3dly, The death of the lens when sufficiently moved within its capsule to tear it from its supposed vascular connections. 4thly, When it is wounded, opacity is caused probably by the enlargement of its vessels, for adhesive matter is poured out, as when other parts of the body are wounded and inflamed.

"That the vessels of the lens are extremely minute, is *a priori* to be expected, on account of the state of extreme subdivision in which its arteries must be, for the arteries entering the globe of the eye are much subdivided upon the choroid coat—very much subdivided on the ciliary processes—still further subdivided on the capsule of the lens, so that when they arrive at the lens itself, they must be in a state of extreme tenuity.

"The crystalline lens of the eye is not an uniform mass of unorganized matter, like the contents of a morbid cyst. It is a transparent body, of nearly the same shape and size in all the individuals of the same species; organized in distinct and uniform strata; is always of greater density at its centre than at its circumference; and is subject to the same changes that occur in other organized parts, inflammation, and loss of vitality. How then can this be a part nourishing itself by imbibition?"—*Ed. Med. and Surg. Journ. Oct.* 1826.

PHYSIOLOGY.

4. *Re-union of divided nerves.*—When a nerve is divided, the two ends, if kept in opposition, unite; and it is exceedingly interesting to ascertain whether the cicatrix is of the same texture, and performs the same functions as the nerve itself; and especially where there is a distinct loss of substance, whether a regeneration of true nervous tissue really unites the two ends. Mr. Descot, in his valuable work on the local affections of nerves, has offered some observations on this subject, a condensed summary of which we believe will be interesting to the profession, as probably but few copies of his work have reached this country.

Mr. Descot is convinced by the results of many experiments, that it is neither by the interposition of a substance simply humid between the ends of a divided nerve, nor by the remote action of the nervous system, nor by the anastomosing nerves, but by a real nervous cicatrix, that the re-establishment of nervous function is produced; it gradually and uniformly accompanies the progress of re-union.

Re-union of the lips of a wound presents phænomena, which are common to all the tissues implicated. When a wound, for instance, divides the skin, cellular, and sub-cutaneous adipose tissues, aponeuroses, muscles, nerves, blood-vessels, and lymphatics, and the edges of it are brought together and kept in exact contact; the wound, if there is no accidental cause of irritation, as soon as the bleeding ceases, agglutinates throughout by means of coagulable lymph, which consists of albumen and fibrin of the blood. This organizable matter constitutes the primary medium of all adhesions, of all re-unions; this agglutination soon gives place to real vascular re-union; and this re-union is every where identical; it appears to be formed of compact cellular tissue, interspersed with an immense quantity of small vessels. Gradually, however, this re-union assumes new characters; between the edges of the skin it becomes a tissue, analogous to the dermal; between the ends of the muscles, fibrous; and between the extremities of a tendon, a genuine tendinous substance. Instead of the innumerable minute vessels which render it every where homogeneous, three or four principal arteries re-establish a communication between the two ends of the artery which had been divided; in fine, similar results take place in each particular tissue, the rest of the cicatrix, in general, blending itself completely with that part of the cellular texture, whose continuity it restores.

Divided nerves re-unite in the same manner as other organs. When a nerve has been divided, an oozing of organizable matter takes place for some days around its ends, on its surface, and in the intervening space; the surrounding cellular tissue is penetrated by this matter, and loses its permeability, in this state, the ends of the nerve are simply agglutinated together, and to the adjacent parts, and its functions are still suspended, as they were immediately after its division. Forthwith, the two ends of the nerve, which are thickened, the investing cellular texture, and the organizable matter, acquire greater consistence, and become vascular; in this state, which continues some time, the two ends of the nerve are united by an organized vascular substance, but still there is not yet a communication of nervous action between them. In due time the cellular tissue ceases to be compact and vascular; the intermediate substance gradually diminishes in size, consistence, and redness; acquires the appearance and texture of a nerve, and ultimately discharges its functions. This end is attained sooner and more perfectly, when the nerve has been simply divided, or the excised piece small, and in a part not much subject to motion. Complete section of a nerve, in a part subjected to much motion, as in the vicinity of a joint, occasions, besides the primary, an accidental and variable separation; in such cases, the re-union if it ever succeeds, is tedious and imperfect, and the restoration of function is also defective, or even never takes place. When there is considerable destruction of the nervous trunk, by excision, cauterization, or a contused wound, a great separation of its two ends remains, and its functions are forever lost, whatever nerve be thus injured. This proves that the nervous anastomosings do nothing towards the re-establishment of function. If a nerve be partially divided or punctured, its re-union and the re-establishment of its functions speedily take place.

Ligature of a nerve is constantly followed by an exact re-union of the two ends, and by a very prompt recovery of its functions. Lesion of a soft part, produced by a ligature, is soon followed by infiltration, above, below, and around it, of an organizable substance, like that which agglutinates wounds: the tissues inclosed in a ligature inflame, soften, become liquified so to speak, and are divided, more or less speedily, according to their nature and size; and the swelling and hardness of the surrounding parts gradually subside on the ligature being expelled, and go into that state which succeeds the healing of a wound made by a cutting instrument. The ligature of a nerve, however, presents some peculiarities: at the instant of its being tied, the nerve contracts distinctly; without doubt, says Mr. D. from the interruption of continuity produced immediately in the softer parts of the organ: the membranous structure which remains inclosed in the ligature, offers so much resistance that it is absolutely impossible to cut it through immediately, however great a degree of constriction be applied. Ligature to a nerve occasions intense pain, and an interruption of its functions, when it is tied suddenly, the results are little different from those which proceed from division of the organ with a sharp instrument. A ligature applied to a nerve, determines at the same time, above, below, and around the place, an effusion of coagulable matter, and especially an ovoid enlargement in the *superior* end. There is an error, says Mr. D. in the statement of Bidloo, and others, that this enlargement exists principally *below* the ligature: this enlargement is quite manifest at the end of a few days, after which it becomes vascular: the ligature, at the end of an uncertain, but not long period, divides the nerve, and is itself detached: then the two ends retained in exact contact, and as it were, united externally by a thickening of the surrounding cellular texture, and the deposition of coagulable matter, soon re-unite in the centre of the separation from which the ligature had just been evolved. In such cases, there is never, as in section of the nerve, a separation or displacement of the two extremities: these remain always in perfect relation: for when they have been totally divided by the ligature, they are already in part re-united around it. The swelling of the surrounding parts is gradually and completely resolved: that of the nerve, on the contrary, continues principally above where the ligature was applied: this enlargement, Mr. D. says was found in the median nerve at the end of thirty years, after it had been tied along with the brachial artery.

5. *Hydrophobia.*—From the experiments of professor **Betti**, of the Great Hospital, Florence, it appears, 1st. That sheep, and all animals of the same kind, cannot transmit hydrophobia which has been communicated to them by a mad dog, when even the latter dies of the disease; 2d. That the rabid virus loses its contagious quality in passing in animals; 3rd. That the foam of these last, like every other fluid belonging to them, and every solid is incapable of creating hydrophobia by inoculation, or in any other way; 4th. That the flesh of these animals, even when they die of hydrophobia, given to man as food, cannot produce that disease; in a word, that this flesh gives rise to no inconvenience, even independent of hydrophobia.*

A fact observed by Dr. Niox seems to favour the opinion that this disease communicated to man, is not capable of transmission. This physician affirms that he has received the saliva of two patients labouring under the most violently exasperated state of hydrophobia on his neck, face, and even in his eyes. His hands have been imbued with their sweat in a hot season. Two of his colleagues who assisted the same patients, were exposed in the same manner, and under similar circumstances, without suffering the least inconvenience. Dr. Niox has in vain endeavoured to inoculate animals with this disease, with foam taken from the bed of the patients.

Cauterization of the sublingual pustules, and the broom ptisan recently recommended by Dr. Marochetti have not prevented the development of the disease.†—*Journal des progres des Sciences, January,* 1827.

6. *Anomaly of Vision.*—Mr. Larrey exhibited to the Philomathique Society, a soldier who had been afflicted with amaurosis for two months, and had been cured by vigorous treatment; but to whom objects appeared larger than they were in reality, and this illusion existed rather in relation to the width of objects than their height. Thus, a man of ordinary size appeared to him to be excessively thick. Deceived in spite of his reason, by the size which objects appeared to him, he never extended his hand sufficiently to take hold of an object, but reached it by groping. The physical organization of his eyes did not appear altered.—*Ferussac's Bulletin des Sciences, &c.*

7. *Use of the Pancreatic Juice.*—The purposes which the pancreatic juice serves, has never yet been shown. Professors Tiedemann and Gmelin, who have been engaged in a series of experiments on digestion, are led to infer from the large quantity of highly azotized principles which it contains, that its purpose may be to animalize the unazotized principles contained in vegetable food.

8. *Cicatrization of Nerves.*—"Mr. Larrey exhibited, at a late meeting of the Section of Medicine of the French Academy, a preparation made from the dead body of an old soldier whose arm had been amputated; and pointed out the manner in which the nerves of the brachial plexus had become cicatrized. The extremities of these nervous cords were terminated by little tubercles, and united one to the other, so as to form actual curves, (*de véritables anses.*) This was the third example in which Mr. Larrey had observed this circumstance."—*Lond. Med. Rep. May,* 1827.

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* Atti dell 'Academia dei Gurgofili di Firenze, T. IV.

† Recueil de Memoires de Medicine de Chirurgie et de Pharmacie Militaires, 1826, t. 18. p. 73–78.

9. *Obliteration of the Aorta.*—"Dr. A. Monro has communicated to the Editor of the Edinburgh Journal of Medical Science, some particulars of a case where the abdominal aorta was obstructed by a tumour. The man was of middle age, and having been exposed to cold, was seized with pain of side, difficulty of breathing, cough, expectoration, and other symptoms of phthisis, of which he died in the course of four months. He had evinced no degree of weakness, numbness, or palsy of the limbs, and could walk till within a day or two of his death, when the abdomen came to be examined, a circumscribed tumour was observed, lying upon the second and third lumbar vertebræ, connected with the aorta. It was about the size of an orange flattened, and adherent to the second and third vertebræ, which were carious. It was filled with clotted blood. The sac did not seem to be composed of distinct layers, but resembled thick leather that had been soaked in water. The aorta entered into the middle of the sac, and the latter appeared to be a uniform expansion of the former, at its division into the iliacs. The tumour was filled by layers of coagulable lymph crossing each other in various directions, so as to form a confused and irregular mass. The contracted portion of aorta immediately below the aneurism was quite impervious. The case therefore proves that the circulation may be carried on below an obliteration even of the aorta, by means of various anastomosing vessels. The case goes to the justification of the attempt made by Sir Astley Cooper to save life by tying the aorta. The want of success in one or two cases is no proof that the principle is bad. At the same time, we can hardly expect that the system will bear a formidable surgical operation, and sudden ligature of the aorta, with the same degree of impunity as a gradual obliteration of the vessel by an aneurismal tumour. These spontaneous obstructions and the results of experiments upon animals merely form, as we said before, justificatory data for the aortic ligature, in cases of extreme danger, and where no other means can offer a chance of saving life."—*Med. Chir. Rev. April,* 1827.

10. *Existence and use of the Cephalo-Rachidien Fluid.*—"Mr. Magendie has read a memoir upon this subject to the Académie Royale des Sciences. The following are his conclusions.

"The cephalo-spinal fluid is one of the natural humours of the body, and on account of its utility it ought to hold the first place in the list of animal humours.

"It is indispensable to the free exercise of the functions of the brain and the spina medulla.

"It protects these parts against external violence.

"It influences the functions of the brain and spinal chord by the pressure which it exercises upon them, by its temperature, and by its chemical nature.

"At the base of the fourth ventricle there is always an opening, which establishes a free communication between the ventricles of the brain and the cephalo-spinal fluid.

"The ventricles are constantly filled with this liquid, and their cavities will contain two ounces, without any disturbance of the intellectual faculties. When above this quantity, there is generally some disturbance in the locomotive powers, and greater or less diminution of intelligence.

"It is very probable that there is often, and particularly during the movements of the brain, a flux and reflux of the cephalo-spinal fluid from the chord into the ventricles, and from the ventricles into the chord.

"A fluid secreted in the spinal chord may pass rapidly into the ventricles of the brain, and fill them.

"A fluid secreted in the ventricles may pass quickly and without obstruction to the lowest part of the sacrum.

"An accidental fluid upon the surface of the brain passes in a few moments into the cavity of the spine and of the brain.

"Lastly, it is very probable that the natural fluid of the ventricles, [illegible] has its principal source in the vascular membrane which covers the spina medulla"—*Archives Générales de Médecine, Février*, 1827.

PATHOLOGY.

11. **Mr. Andral, fils,** ***upon the Pathological Anatomy of Elephantiasis.***—**"Since the publication of the interesting works of Mr. Gautier and Dutrochet upon the structure of the skin, the existence of the different layers which they admit between the epidermis and the skin has been repeatedly confirmed, both in the negro, and in other animals; but this has not happened with respect to the white races, and many persons deny the presence of the rete mucosum in these last. I have, however, had the opportunity of observing one case in which all the three layers were distinctly developed. It must not be imagined that the layers referred to had been created by disease; for the more we advance in the knowledge of morbid anatomy, the more shall we be convinced that there are few tissues, (excluding from this term the morbid secretions,) which may not be rendered more apparent by disease; the nutritive function being more active. As some proof of this, it may be remarked that the parts which are thus manifested by diseased processes in man are visible in the healthy state in other animals; as one instance of which, we may refer to the fibres of the walls of the gall bladder. The following case is** interesting, as proving that morbid anatomy may conduce to the knowledge of the anatomy of healthy parts, and, on the other hand, ensure more satisfactory results in pathological investigations:—

"A woman, seventy-four years of age, died of phthisis, in La Charité. She had formerly had an ulcer in the right leg, but which had been healed for thirteen years, and the limb had become extraordinarily enlarged. The right leg was swelled and hard, and the skin wrinkled, and of a brown colour, like that which is observable on the external edge of the hand in negroes. In some places it was nearly black. The arteries and veins were healthy. The subcutaneous and intermuscular cellular tissue were remarkably developed, and even indurated. It had the strictest resemblance to the structure in the parietes of the stomach when it has become scirrhous. As we approached the cutis it became more and more dense: the cutis itself was considerably increased in thickness, and in many parts it was impossible to establish a line of demarcation between the thickened cutis, the aponeurotic filaments which terminated there, and the indurated cellular tissue, which lies upon its internal surface; all these parts appear to be different stages of the same structure. The skin was neither injected nor modified in its colour. Upon the skin the papillary body was remarkably manifested in many parts, and which, commonly confounded with the skin, had here a separate and independent existence. Immediately upon the papilli were three layers, which were all more or less distinct, according to the parts in which they were examined; and, lastly, upon these was the cuticle.

"The papillary body, (*bourgeons sanguins* of Mr. Gautier,) had, in many points, only its usual dimensions; but, elsewhere, the small cellulo-vascular bodies which constitute it had undergone such an elongation that they might easily be taken for the whitish filaments which are found upon the lingual and buccal mucous membrane of many birds. Between [illegible] filaments, united in groups, a whiter and denser tissue was interposed, which was prolonged on the one part into the cutis, and on the other into a white body, which will be described below, and which serves to separate the papillary body of the skin from the rete mucosum. The papillary body was readily separable from the chorium, properly so called.

"Upon the papillary body, and between it and the epidermis, three very distinct layers were found, but unequally developed. The first, proceeding from within outwards, had the appearance of a thick white line, dipping into the intervals of the papillary body. No vessel ramified upon it, and it appeared to be formed of a cellulo-fibrous tissue. It was not every where equally distinct. This was the *couche albide profonde* of Mr. Gautier.

"Above this layer was another of a brown, black, or gray colour, in different parts. Viewed by a vertical section of the skin, a colouring matter of different shades was seen, and nothing else. By an oblique section it had the appearance of a net-work, composed of infinitely delicate black filaments, crossing each other in innumerable directions, and leaving transparent intervals, by which the subjacent white parts were rendered visible. This net-work was evidently analogous to the coloured layer in negroes.

"In many points the epidermis seemed to cover immediately the layer just described; but in others a new layer was seen, which interposed between the coloured layer and the epidermis. In some places it had considerable thickness, and acquired, at the same time, a great hardness, a real horny consistence, and occasionally was formed of a series of imbricated scales. Sometimes it was but a simple white line, analogous to the epidermis of the papilli. It is manifestly the *couche albide superficielle*, superficial white layer, of Gautier. Over the whole was the epidermis."—*Revue Médicale, Fevrier*, 1827.

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12. M. C. Billard *on the Œdema or induration of the Cellular Tissue of Infants.*—"This disease is what has been termed 'skin bound,' by some English authors, and is mentioned by Dr. Heberden, in his Epitome of the Diseases of Children as 'a disease attended with hardness of the skin.' Mr. Billard considers one variety of it as simple œdema, and another as depending upon the hardening of the adipose substance. When the tenseness of the integuments is owing to the infiltration of the cellular tissue, the limbs are always swelled, more or less voluminous, and the deep colour of the integuments indicates plethora and congestion in different organs: the irregularity of the pulse, and the difficulty of breathing, are evident symptoms of superabundance of blood in the heart, the lungs, and the great blood-vessels. The hardening of the adipose substance occurs with or without general infiltration of the subcutaneous cellular structure. The cheeks, the thighs, the calves of the legs, and the back, are the common situations of this hardening. It is observed with or without disturbed respiration, and ordinarily supervenes at the point of death. Mr. Billard has seen it take place after death upon children who have been rapidly carried off. The adipose tissue is found firm, fixed, and as hard as suet upon dissection; in fact it presents the same cha-

racters as meat in butchers' shops. We may then imagine that the fat, under certain circumstances, may, even during life, become concrete, if the animal heat should by any means abandon it.

" Mr. Billard next considers the nature of the œdema. Is it different from the œdema in adults? Mr. Breschet had maintained the affirmative, and had supported his opinion by an analysis of Mr. Chevruel. This chemist states, that in the jaundice accompanying the hardening of the skin, the blood is diseased, that it contains a peculiar colouring principle, and that there is in the serum, separated from the febrin, a spontaneously coagulating matter. The jaundice is not now the object of investigation. It is sufficient to observe that it does not necessarily accompany the œdema. It is true, however, that the serum does contain a substance that coagulates spontaneously: but it is also true that the serum of healthy children equally coagulates spontaneously. Mr. Billard has placed in one vessel some serum taken from a child whose integuments were œdematous, and in another vessel some serum taken from a child in whom there was no œdema. Coagulation was effected in both instances in very nearly the same time. Mr. Billard remarks that the coagulation is more rapid as the quantity is less; in short, that it requires the ordinary conditions of evaporation.

"Moreover, Mr. Billard found that by making incisions into the infiltrated limbs there was a rapid flow of serum, and that the skin lost all its hardness. *Sublatâ causâ, tollitur effectus.*

"It results then, from these facts, that this peculiar state of the skin in infants is nothing else than true œdema, altogether of the same nature with that which is discovered in adults affected with disease of the heart, or great blood-vessels. The hardness of the skin is entirely owing to its being much less loose than in maturer age, and consequently yielding less readily to the pressure of the fluid.

"In the year 1826, 5392 infants were admitted into the Hospital 'des Enfans Trouvés.' Of these, 240 were affected with œdema, or hardening of the skin.

" Almost the whole of these children were from one to eight days old, and some were affected from birth. The most common accompanying disease was jaundice.

" Of ninety children that were examined, the liver was morbidly affected in twenty only. Of seventy-seven, forty-three had the lungs perfectly healthy. Of the same seventy-seven, forty had the foramen ovale closed; and in twenty-eight, the ductus arteriosus was considerably contracted. In fifty there was inflammation of the digestive canal, to a greater or less extent.

" Lastly, what is more worthy of notice, there was in all a very remarkable general congestion. The venous blood, especially, predominated in the different tissues; and there was a considerable flow of blood upon dissecting the bodies of children thus affected. This general congestion is rather due to a superabundance of blood in the system, to a kind of congenital plethora, than to a mechanical obstacle in any point of the circulation. On the other hand, the skin is remarkable for its great dryness; no moisture is manifest, so that we may suppose there is some derangement in the capillary circulation. Accordingly, the usual surplus not being carried off by the secretion from the skin, a general plethora ensues, and subsequently effusion. One fact comes in aid of this opinion; it is, that stimulating frictions quickly remove the œdema; and when an infant is wrapped in warm flannels, applied immediately to the skin, it is found the next day in abundant perspiration, and the œdema entirely gone, or greatly diminished.

"Mr. Billard thinks that the opinion respecting the fatality of this disease is incorrect. It has arisen from the circumstance of its generally accompanying other more important diseases."—*Archives Générales de Médecine, Février* 1827.

13. *Pericarditis.*—In Professor Speranza's Medico-clinical Report for 1823–4, there is recorded an interesting case of pericarditis. We have not been so fortunate as to see the original work, but we copy from our esteemed transatlantic cotemporary, the Edinburgh Medical and Surgical Journal, the following notice of the appearances exhibited on dissection. "The pericardium, much thickened, was every where attached to the heart so firmly that it could not be separated without laceration, and verified the ancient but erroneous notion of *hearts without pericardium.* An immense mass of adhesions, suppurations, and abscesses, discharging purulent matter, covered the surface of the membrane. The heart was much enlarged. In the muscular substance of the left ventricle was an abscess which might contain a pigeon's egg full of purulent matter; the interior of the ventricle contained various albuminous concretions; and the left auricle contained several excrescences, some of which were cartilaginous. This case had been complicated and obscure; more especially from the absence of symptoms denoting affection of the pericardium. But perhaps it must be admitted to be an example of *pericarditis*, terminating in inflammation of the substance of the heart—a point much doubted by Laennec."

14. *Case of Rupture of the Liver.* By Dr. Guerard, jun.—"J. Kief had been attacked, in July, 1824, with typhus fever, which was at first complicated with gastric symptoms. Nothing particular occurred till the twenty-first day of the disease, which was marked by a perfect crisis, by perspiration and urine. The fever disappeared from this period, and the patient's strength was so recovered that he could sit up for several hours. He complained of nothing during his convalescence, and tonics were administered; but on the ninth day from the crisis he suddenly experienced severe colic, with urgent tenesmus, and expired almost immediately. The body was examined the next day.

"The exterior of the body presented nothing particular. On opening the abdomen, five or six pounds of blood were found, partly coagulated and partly fluid, dispersed throughout the cavity. The right hypochondrium contained the greatest part of this blood; and, on examining the liver, a fissure was observable in its substance, surrounded with, and partly closed by, coagulated blood. The organ was of the usual size, but rather pale. Nothing peculiar was visible on its inferior surface, but on the right side of the suspensory ligament, the peritoneum, which covers the liver, was separated by the extravasated blood to the extent of four or five inches. The prominence formed by this separation of the peritoneum extended transversely to the obtuse edge of the liver; and in this place there was a rupture two inches and a half in length, from before backwards. A little more backwards, and to the right side, there was a fissure, an inch in length, in the substance of the liver. The fissure was in a strait direction from before backwards; its edges were fresh, and without any alteration in the substance of the liver.

"The hepatic veins having been examined from their origin to their termination in the vena cava, a rupture was visible in one, which was the size of a quill, and the opening, nearly an inch long, corresponded to the fissure in the substance of the liver. Two irregular cavities, each containing about two ounces and a half of coagulated blood, extended from the opening of the vein into the substance of the liver. The structure in other respects was perfectly natural."—*Journal Générale de Médecine pour Hans Archiv. fur Med. Erfahrung, March and April,* 1826.

15. *Fungus Hæmatodes of the left lung and diaphragm.*—"The organic changes which the lungs undergo in disease are extremely numerous, and many of them are quite unsusceptible of diagnosis, by the most accurate pathologist, during life. A man lately came into St. George's Hospital, with the *left* side of the thorax somewhat bulged out, and completely devoid of sound or respiratory murmur, on percussion and auscultation. In the *right* side of the chest, the heart was seen and felt beating; but respiration could not there be heard, except high up near the clavicle, and backwards near the spine. The respiration was laborious, the lips blue, the pulse quick. No accurate history of the complaint could be obtained. The patient stated that he had been ill six weeks, with pain in the lower part of the sternum, cough, but no expectoration. It was pretty evident that there was fluid in the left side of the thorax, and as it might possibly be purulent, it was agreed, in consultation, that an opening should be made between the sixth and seventh ribs. This was done by Mr. Brodie, when a considerable quantity of sero-sanguineous fluid issued. The patient experienced great relief, and slept for some hours uninterruptedly after the operation. He gradually sank, however, and expired in a day or two. After the operation, the sound immediately returned in the right side, where the pulsation of the heart had previously been felt. The *left* side sounded hollow, of course, from the unavoidable admission of some air during the operation. On dissection, we understood that a large fungus hæmatodes had occupied and disorganized the left lung, as well as the corresponding portion of diaphragm, descending to the spleen."—*Med. Chir. Rev. April,* 1827.

16. *Mollescence of the lungs.*—In the January Number of the Edinburgh Journal of Medical Science, Dr. Hastings, of Worcester, has described a peculiar softening of the pulmonary texture, without any tubercular disorganization, or any of the usual effects of inflammation. "In consequence of this mollescence, profuse hæmorrhages sometimes occur—sometimes large ulcerous cavities are formed, not tuberculous, nor surrounded by any hardening of the parenchyma, as in hepatization. Sometimes the cellular tissue of the lung passes into a pulpy state, and makes its way through the bronchia by expectoration, without any ulcerated cavity being formed. This pathological condition has presented itself to our author in very different states of the constitution:—sometimes in connexion with fever—sometimes with gradual failure of the vital powers, and slow emaciation—but, in most instances, without symptoms indicative of much mischief in the respiratory organ. Its tendency, in all cases, is to unfit the lungs for their office, and consequently to destroy life. Six cases in illustration are detailed by our author, of which we shall notice one.

"A young lady had been in a dubious state for two months, in consequence of cough, some trifling expectoration in the mornings, and occasional tinges of blood in the sputa. Three of the same family had died of consumption. The young lady, however, was 'full of flesh,' and was gaining rather than losing in that respect. Still she had an unhealthy aspect—the pulse about 76—the tongue clean—bowels regular—breathing free—catamenia regular. In short, she complained of nothing except a dry hacking cough on first getting up in the morning. On percussion, the chest emitted a natural sound on each side, and the respiration was heard over both sides. Perfect pectoriloquism was heard on the left side, between the second and third, and third and fourth ribs. Our author therefore concluded, that there was a cavity in the superior lobe of the left lung. It was considered to be of small extent, and therefore recovery possible—and, at all events, danger not imminent. Cupping between the shoulders was prescribed, and infusion of roses with tincture of digitalis every four hours. Mild unirritating diet. In a few days the blood disappeared from the expectoration, and the young lady considered herself as 'in perfect health,' except a trifling cough. Another examination with the stethoscope confirmed the former diagnosis of an excavation in the lungs. She went on for about a month pretty well, when one morning she brought up some blood, accompanied by a small quantity of purulent matter. Alum was added to the mixture above-mentioned, and the pil. aloes cum myrrha prescribed. The hæmoptysis proceeded no farther, and again she thought herself getting quite well. In ten days more, some hectic fever showed itself, with some ill-looking expectoration. In three days from this period there was expuition of scarlet-coloured blood. She complained of pain between the shoulders. Quietude—alum, infusion of roses, tincture of digitalis—cupped between the shoulders. The hæmoptysis continued the next day, and a grain of superacetate of lead, with a quarter of a grain of opium, every two hours, were ordered. These means proved inefficient, and she died in a few days.

"On removing the lungs, they were found slightly adherent on the right side, and more so on the left. There was no appearance of purulent secretion in the trachea. The bronchia contained some sero-purulent fluid. On tracing the ramifications in the right lobes, the only appearances were, a rather suffused state of the blood-vessels in some parts—the lungs of a soft structure—and the air-vessels pervious throughout. This state obtained in the left side; 'but on the upper and outer surface of the superior lobe appeared a cavity large enough to admit the half of a middle-sized orange, which had been prevented from opening into the cavity of the chest by the adhesion of the surface of the lung to the costal pleura; but it communicated freely with the bronchial tube.' Pus was searched for, but could not be found:—Nor was there the smallest degree of hardness in the sides of this ulcer, indicative of the process of adhesive inflammation having been set up. On the contrary, the appearance was that of simple ulcerative absorption."

17. **Bellingheri's** *Case of Acute Duodenitis, followed by Encephalitis and Acute Hydrocephalus.*—"The following case is related by Dr. C. F. Bellingheri, of Turin. A female, of robust constitution, and previously enjoying good health, began, towards the end of July, to feel loss of appetite, and depression of spirits. On the 25th August, she experienced aversion towards food, and inclination to vomit—tongue foul—pain in the head—no fever. 26th. Took two ounces of manna, which she vomited. The symptoms continued, and a physician prescribed an emetic of ipecacuan and tartarised antimony. Vomiting followed, but nothing particular was discharged from the stomach—the bowels were then acted on. In the evening of this day, Dr. B. saw the patient, and found her with fever, loaded tongue, the point of this organ being red; thirst great; in-

clination to vomit; no pain, even on pressure, in any part of the abdomen. At this period there prevailed an inflammatory fever in Florence, accompanied by considerable determination to the mucous membrane of the bowels; and, as it was suspected that this patient had made rather too free with strong liquors, Dr. B. did not hesitate to consider the disease as partaking of the reigning epidemic, and as consisting chiefly of inflammation of the stomach and bowels, which would soon affect the head. A copious bleeding was prescribed. The blood was not inflamed. Tamarind water, with sugar, for drink. 27th. The head-ache had disappeared—thirst continues, vomiting is still distressing—tongue very foul and yellow—sense of taste much depraved—great aversion to food—the food, when swallowed, produced no pain, or heat, or weight in the stomach, nor any increase of the sickness--neither was there any tenderness on pressure in any part of the abdomen. The motions were liquid and yellow—urine red, with a sediment. The fever continues, the pulse being quick and concentrated. Another venesection, to the extent of 16 ounces—blood inflamed. Vegetable acid drinks continued. 28th. Same symptoms: numerous leeches to the anus, followed by syncope. 29th. The thirst urgent—tongue thickly coated, red at the tip and sides—frequent efforts to vomit—no pain in the abdomen—stools abundant, liquid, and yellow—less fever to day. Ten grains of ipecacuanha exhibited, which was soon returned, merely with the fluids drunk. Things continued in this state, till the 1st September, when the vomiting was almost incessant, and the fever became more intense than before. In the night delirium came on, but she did not complain of pain in the head—cough and crude mucous expectoration. 2d September, the venesection repeated to 16 ounces--blood buffed, and very consistent. 3d. The delirium has ceased—no pain in the head—none in the abdomen, even on pressure. In the evening, an exacerbation of the fever, and the bleeding was repeated. The blood was now natural, but thick. 4th. The vomiting less frequent—the tongue begins to clean—dejections liquid and black—some miliary eruptions on the skin—general perspiration—urine clear and abundant—pulse rapid, but non-resisting—the patient could give no account of her feelings. These symptoms continued till the 7th, when the head evidently was much affected, and numerous leeches were applied there, while blood was taken from the jugular vein. Blisters, sinapisms, &c. were employed. 8th. Bled from the feet, and ice applied to the head. 9th. Comatose—paralysis of the left arm, with convulsive contractions of the right. There was now pain, on pressure in the region of the duodenum, as evinced by signs, rather than words. 10th. Apoplexy closed the scene.

"*On Dissection*, the duodenum was found highly inflamed throughout its whole extent, being of a deep brown colour, and adherent, by means of coagulable lymph, to the neighbouring parts. The stomach was also inflamed in the vicinity of the pyloric orifice. The rest of the intestinal tube was sound, as were the liver, and other abdominal viscera. In the head, the pia mater was found to be inflamed and injected, particularly over the right hemisphere. The cortical substance of the brain was of a deep ash-colour, and softened. There were more than two ounces of water in the lateral ventricles, of a sero-sanguineous character. 'The dissection,' says Dr. B. 'proves that the disease was a severe acute duodenitis, followed by encephalitis and acute hydrocephalus.'

"The conclusion which Dr. Bellingheri draws appears to be legitimate, and the case is curious, as showing that so sensitive an organ as the duodenum may be inflamed, and no pain even on pressure, may be complained of. The emetics in this case, very probably aggravated the disease. The extension of the inflammation, from the intestinal canal to the brain, is here finely illustrated."—*Journal Universel des Sciences Medicales.*

18. *Identity of the Vaccine and Varioloid Virus.*—"Mr. **Kergaradec** read a letter which he had received from Mr. Guillon, an old naval surgeon, vaccinator of the Canton of St. Pol de Leon. This surgeon having to oppose an epidemic small-pox, and having no vaccine matter, took from a girl, fifteen years old, who had been vaccinated, the virus of a varioloid pustule, on the fifth day of the eruption, and inoculated with it a child at the breast. What was his surprise to see ten *superb* vaccine pustules result from this inoculation! Wishing to verify so singular a fact, and fearful of allowing himself to be imposed upon by appearances, he inoculated forty-two children with the matter of these pustules arrived at their ninth day, and these all had the vaccine; these again furnished in their turn, virus to inoculate one hundred others, and the operation, performed in the presence of the authorities of the place and several professional men, was followed by the same result. Lastly, Mr. Guillon, wishing to renew his experiment, inoculated, with the same success, ten other persons with the matter of varioloid pustules, from ten students of the College of St. Pol de Leon, who had been formerly vaccinated.

"A later letter announces that numerous experiments confirm the identity of the varioloid and the vaccine virus. The first appears to have even more energy than the second; it acts as a preservative like the second, since individuals inoculated with it, had with impunity, exposed themselves to the contagion of small-pox."—*Lond. Med. and Phys. Journ. May*, 1827, *from Revue Médicale.*

19. *General vascular Inflammation.*—We copy from the Medico-Chirurgical Review the following cases of general vascular inflammation, they were communicated by Dr. **Dommanget** to the Societé de Médecine.

"Case I. Francis Blanc, aged 25 years, a French soldier in the Madrid Garrison, was brought into the Military Hospital on the 20th September, 1823, having been ill for a fortnight in the neighbourhood of the Spanish capital. The pulse was strong and frequent, tongue red, great thirst, face suffused, conjunctivæ injected, breathing precipitous and impeded, dry cough. On percussion, the chest sounded very dull, there was a burning heat at the epigastrium, and indeed over most parts of the body. Venesection to *eight ounces*, emulsions, cold applications to the abdomen, and warm fomentations to the chest. 21st. The thoracic symptoms were diminished, those of the abdomen continued. Thirty-six leeches to the epigastrium. In the evening something better, tongue less red, frequency of pulse abated. 22d. The patient was better; but during some devotional exertions, he became suddenly worse. The gastro-intestinal phlegmasia increased rapidly, accompanied by sympathetic affection of the head, rising to delirium, requiring some men to confine the patient in bed. The tongue got dry, the thirst inextinguishable, the eyes sparkling, delirium loquax. 23d. Same condition. Thirty leeches to the epigastrium and tract of the jugulars. Ice to the head, warm fomentations to the abdomen. 24th. No alterations in the state of the pulse. In the evening the patient got some wine clandestinely, immediately after which the delirium was greatly exasperated, and a straight waistcoat was applied. 25th. No material change. Forty leeches were applied to the epigastrium and neck—cold to the head continued. 26th. The patient is more calm; but the force of the pulse is nowise abated. He passed black blood by stool, in some quantity. 27th and 28th. Same state continued. 29th. The delirium is now changed to coma, with a kind of periodical trismus. The pulse is still unabated. Colliquative diarrhœa added to the other symptoms. In this deplorable condition the unfortunate patient continued two days, and then expired.

"*Dissection.*—There was some effusion between the membranes, opacity and thickening of the arachnoid, softening of the cortical substance of the brain, water in the ventricles. The same conditions were observable in the spinal canal, which was entirely opened. The lungs appeared sound exteriorly, but the parenchymatous structure showed many points of chronic inflammation, and some crude tubercles. The mucous membrane of the lungs was extensively inflamed, and the bronchia filled with viscid mucus. The pericardium adhered in some places to the pleura of the lungs. The heart was pale, and its structure flaccid. 'The ventricles and auricles were evidently inflamed, as were the mitral and tricuspid valves.' The arteries, at their origin from the heart, were of a cherry-red colour, which extended, in the pulmonary artery, to its divisions and subdivisions—in the aorta, to its iliac bifurcation. The carotids, jugulars, and subclavian vessels were all inflamed—and the appearances of inflammation could not be washed off by repeated lavations. There were several marks of phlogosis in the mucous membrane of the stomach and bowels. Near the cæcum there were ulcerations to a great extent, with tumefaction of the mesenteric glands. Some of these were as large as pigeon's eggs, and degenerated into a melanose structure. In the colon were numerous marks of inflammation, several vestiges of cicatrised ulcers—and many ulcerations still open. There were several other morbid appearances in the body, but none of them apparently connected with the immediate death of the patient. There were, however, marks of inflammatory action in almost every part of the body—even in the joints, absorbent glands, &c.

"Case II. A fusileer in the eighth regiment of Swiss Guards, aged 23 years, entered the Military Hospital of Madrid on the 31st of January, and died on the 8th of March. The following were the principal phenomena presented to the observation of Dr. Antonini, who was then in charge of the Military Hospital. When he was first received, the skin was of a yellowish tint, eyes sunk, head inclining forward, some infiltration in the abdomen and lower extremities, sense of oppression in the chest, with difficulty of breathing, dull sound over a considerable extent of this quarter, pulse rather quicker than natural, but hard, full, and strong, inability to lie in any other posture than on the back, sleep very disturbed. This still continued, with some trifling variations, till the last; but never prevented the patient from getting up in the day time—even on the day of his decease. The treatment was chiefly directed towards the affection of the chest, which was considered as the principal seat of disease. With this view, general bleeding was several times practised, as well as leechings and blisterings. These produced some relief for a time only. Debility gradually increased—but the state of the pulse above-mentioned never altered, which led to the prognosis that there was inflammation of the sanguiferous vessels, and that the patient would be lost.

"*Dissection.*—The chest sounded dull in almost all parts of its circumference. The dura mater was slightly injected, and a considerable portion of the arachnoid was opaque. No other alteration in any part of the brain. The coverings of the spinal marrow presented unequivocal marks of intense inflammation. Some portions of the medulla spinalis were softened, and there was considerable serous effusion between it and the membranes. The cellular tissue enveloping the large nervous trunks, as they issued from the spine, was inflamed, but the neurilema itself, and the medullary structure were apparently sound. In the chest there were about two pints, (French,) of serous effusion, lungs studded with tubercles, (some of which were suppurated,) and gorged with blood—larynx, trachea, and bronchia inflamed. There was considerable effusion in the pericardium—cavities of the heart filled with black blood—lining membrane of the chambers of an intensely red colour, which extended into the great vessels. The aorta and its branches, as far even as the popliteal artery, were inflamed. The carotids presented the same appearance, and the arteries of the upper extremities, near to the wrist, showed similar phenomena. The corresponding veins were equally red and inflamed. The vessels of the short circulation presented the same appearances as those of the general circulation. Our author did not conclude that the red colour was proof of phlogosis till after numerous fruitless attempts had been made to obliterate it by washing. In the mucous membrane of the stomach and bowels, were many traces of chronic and acute inflammation. Large ulcerations and erosions were found in the neighbourhood of the ileo-cæcal valve. The liver was enlarged, and greatly degenerated in structure. The various other traces of disease we shall pass over, as of inferior importance.

"*Remarks.*—The first thing in this case which our author notices is the fact of the pulse never having been reduced by the numerous bleedings which were practised. This symptom, he thinks, will one day be acknowledged, in conjunction at least with others, as characteristic of inflammation of the blood-vessels. But as in this disease there are generally a great many other lesions going forward, the diagnosis will be always difficult. The softening of the spinal marrow in this case was a very unexpected occurrence, as the patient walked about the ward, even on the very day of his death! There was no paralysis—and the debility of muscle was not greater than might have been expected in a chronic disease of the same standing."

20. *Extraordinary case of Chronic Inflammation of the Omentum and the Cellular Tissue of the Abdomen, in a young girl.* By G. STRAMBIO.—"Mademoiselle Taini was born at the full period, and to all appearances healthy and well formed. At fourteen months old she was weaned; she was then thin, pale, and with a large abdomen. The catamenia appeared at twelve years of age, returned regularly for twenty months, and were suppressed at this time for five months. In consequence of participating in the gaieties of the carnival, she began to complain of pain in the right side of the abdomen, the size of which rapidly increased, and produced a suspicion of pregnancy: the reproaches of her parents aggravated her sufferings; purgatives had been administered without any alleviation,—when Mr. Strambio was called in towards the latter end of March 1822. She was then eighteen years of age, and had kept her bed for several days. Her face was pale; pulse hard, and frequent; skin burning; vomiting caused by taking food; the abdomen very voluminous, and more prominent on the right than on the left side; and on attentive examination, several hard and indolent tumours were manifest, pain was only produced in the subjacent parts by strong pressure. The left breast had disappeared; the right had for some weeks before augmented in size, and was tuberculated like the abdomen. Affection of the glandular lymphatic system, and violent inflammation of the stomach and bowels. An antiphlo-

gistic treatment was pursued. A tumour, the size of an egg, on the right side of the rectum, prevented the introduction of a syringe or of the finger. Hydrothorax and anasarca ensued; and finally death, on the 22d of April.

"The body was examined the next day. A great quantity of serum was found in the cavities of the pleuræ and of the pericardium; the lungs were in their natural state, or perhaps rather more flaccid. Nothing remarkable was discovered in the peritoneum. The stomach and intestines were filled with gas, and greatly inflamed; the omentum, detached from the viscera to which it adhered, had degenerated into a substance furrowed on its surface, very white both externally and internally, divided by portions of thin membranes and striæ of a pale rose-colour, inodorous; it was elastic, and did not retain the impression of the finger; it was neither fat nor sebacious, but medullary in its appearance. It occupied all the lower part of the abdomen to the umbilical region. It was disposed in separate masses, connected by membranous bands or cellular tissue. The left kidney, the spleen, the abdominal aorta, the intestinum rectum, of which the calibre was almost obliterated, the ovaria and the uterus, which, according to Mr. Paletto, were in the virgin state, were imbedded in this substance. It obstructed the vagina two inches above the external orifice, and had completely obliterated the remainder of the canal. The mesentery, the liver, the kidneys, the spleen, and the bladder, were without alteration; the spleen was pale, but not increased in size; the right breast exhibited precisely the same appearance as the omentum.—*From the Annali di Medicina fisol, Pathol. in Bulletin des Sciences Médicales, Fevrier* 1827.

21. *Cancer of the Stomach.*—Two cases of this disease are reported to have occurred in la Pitié, without any very marked symptom during life: "One of them had many signs of gastric derangement on his admission, as loss of appetite, bitter taste, and constipation. The tongue was clean; there was urgent thirst, and considerable emaciation. The heat was natural; the skin dry and rugous; and the abdomen in some points painful. His digestion was imperfect. Alvine evacuations were procured with difficulty, but afforded some relief. The thirst, and a sense of weight in the stomach, were constantly oppressive. His countenance was pallid. Once during his illness vomiting occurred, but apparently gave him ease. Emaciation was extreme; his pulse fluttered; and at length death ensued. To the last moment he complained of a tormenting thirst.

"Upon examination of the body after death, an extensive cancerous ulcer was found occupying the pylorus. The gall-bladder was filled with inspissated bile, of which not a drop could escape through the biliary ducts. Small cancerous tubercles were spread over the surface of the peritoneum. The intestinal tube exhibited nothing particular.

"The other patient had remarked a difficulty in his digestion for many months, although his appetite continued good. Very soon, a constant acute pain compelled him to bend forwards in walking. He had not urgent thirst, but had occasional vomitings. The alvine evacuations were rare. Together with these symptoms, the tongue was brown and furred; but the point and edges were not red. The countenance was pale; there was frequent vomiting of an acid matter, but no sensibility in the epigastrium upon pressure. Diarrhœa latterly ensued, and death.

"On opening the body, a large cancerous ulcer was noticed, occupying the middle space of the gastric surface, and near to the pylorus."—*Nouvelle Bibliothèque Médicale, Fevrier* 1827.

22. *On the identity of Angina-Gangrenosa and Croup.*—In the first number of the Journal des Progres des Sciences et Institutions Médicales en Europe et en Amerique, &c. is an elaborate and interesting memoir by Mr. Deslandes, on a question which at present is exciting considerable attention abroad—the identity of angina-gangrenosa and croup. Mr. D. concludes his paper with remarking that he considers it proved that these two diseases are identical, (sont identiques sous le rapport de l'etat local qui les constitue.) The proofs of this identity are, he says, as follows:—

1st. The most characteristic symptoms of croup are the result of the extension of the malignant angina into the air tubes.

2d. When this extention takes place, the patient often expectorates membranous tubes, similar to those ejected in croup.

3d. Post mortem examinations show, that the alterations resulting from the extension of the disease into the air tubes, are in all respects similar to those met with in croup.

4th. The membranous tufts of the fauces, examined anatomically, chemically, and in every other manner, do not present any essential difference from those which are developed in the larynx and trachea, except that they have, in general, a greater tendency to decomposition, which is the principal cause of these two affections having been considered different during the last sixty years. Besides, the mode of adherence of these tufts are similar, the tissue which they cover, does not appear more altered in one disease than in the other; finally, it is proved beyond all doubt, by the fact, that the continuity of the substance has been recognised between the concretions of the larynx and the eschars of the fauces.

23. *Deep-seated Abscesses pressing on the Larynx and Trachea.*—We copy the following case from Mr. Porter's work on the pathology of the larynx and trachea, with the hope of drawing the attention of the profession to the disease. We have heard of two cases which terminated fatally, having occurred in this city, and in neither of them was the nature of the disease suspected until it was developed by dissection. It is unnecessary to add that the abscess should always be opened; but sometimes it will be sufficient to make a deep incision, and the abscess will in a few hours burst into the wound.

"Margaret Henessy, æt. 40. Admitted into the Meath hospital, June 19, 1826. Complains of a sense of suffocation, particularly at night: there is very little cough, but there is considerable soreness on pressing the thyroid cartilage and windpipe, and she has a sensation of something very foul coming up with her breath. The breathing is evidently oppressed, but not in the least degree sonorous, and there have not been any febrile symptoms.

"She had some aperient and antispasmodic medicines without relief, and on the 21st a slight fulness and œdema appeared on the lower part of the neck, nearly in the centre, and inclining to the left side; but there was strong arterial pulsation, evidently that of a large vessel, to be felt in that spot. There did not appear to be very great distress in respiration; but as she complained so much, and said she must be suffocated if something was not done, I resolved to attempt opening the abscess, which I was quite satisfied existed deeply in the neck.

"I made an incision along the central line of the neck, (of course avoiding that part where I suspected a large artery to lie,) down to the trachea, which laid bare the three superior rings. Not a drop of purulent matter followed the incision, but she expressed herself relieved, and shortly after fell into a sound sleep, such as she had not enjoyed during several preceding nights.

"On the 23d I found that the abscess had burst into the wound, and there was a large discharge of very fœtid pus on the poultice. On introducing a probe into the opening, it passed obliquely to the depth of three inches or more from the surface, apparently round the trachea, and behind it. Pressure on the lower part of the left side of the neck caused the discharge of a quantity of matter mixed with bubbles of putrid gas.

"This woman was discharged from the hospital quite recovered on the 20th July; but she complained for a long time afterwards of soreness in the throat, and difficulty of swallowing, in the situation the abscess had occupied."

24. *Pleurisy and Abscesses after Surgical Operations.*—Mr. Velpeau has published in the Revue Medicale for December 1826, some clinical reports on this interesting subject. The following is a summary of the conclusions of Mr. Velpeau.

"1st. That those who die of acute diseases succeeding surgical operations, or profuse suppurations, generally fall victims to pleurisy, and to the formation of abscesses, more or less numerous in the viscera.

"2nd. That this kind of pleurisy, hitherto undescribed, is of a peculiar nature, and might be denominated the 'pleurisy succeeding operations.'

"3rd. That this disease differs from simple pleurisy, in the latency of its march, the rapidity of its progress, and the almost invariable certainty of its fatality.

"4th. That the purulent depôts above described never acquire a large volume; but are circumscribed and spherical collections of matter, concrete or fluid.

"5th. That they are more especially developed in the liver and the lungs, where they may give rise to a species of tuberculous affection.

"6th. That the pleurisy and formation of depôts are rarely accompanied by characteristic local symptoms, sufficient to give notice of their existence.

"7th. That these inflammations and depôts are manifested under the influence of absorption of pus, and of its transport into the current of the circulation.

"8th. That general blood-letting appears to favour the development of the maladies in question.

"9th. That, finally, when the existence of the malady was unequivocal, the march of the disease has hitherto been unchecked by any medical treatment employed."

We are not prepared to yield our assent to all the conclusions of our author, we suspect some of them have been made rather hastily.

25. Dufau *on Intermittent Irritations.*—Mr. Dufau has published in the Journal Général de Médecine, an interesting paper on intermittent irritations, with numerous cases. We can afford space only for the conclusions at which he has arrived; they are as follows:—

1st. That there is such a thing as intermittent irritation.

2nd. That all, or almost all, the organs of the body are susceptible of this irritation.

3rd. That this irritation may be of a febrile or apyretic nature—that is to say, it may, or may not be accompanied by sympathetic symptoms.

4th. That intermittent fevers are probably intermittent irritations.

5th. That the phænomena of these fevers may be produced by intermittent irritation of any, or all of the organs of the body.

MATERIA MEDICA.

26. *White Mustard Seed.*—The powers of this medicine in numerous and very different diseases, has been strongly urged in a pamphlet by Mr. John Turner, and its value still further enforced in a small work by Charles Turner Cooke, consulting surgeon, &c. Principally owing to the representations of these writers, the medicine came into very extensive use in Great Britain about two years ago. Within the last year, however, abundant proofs have been adduced of the injurious effects that have followed the indiscriminate use of the remedy, and we learn from Dr. Johnson's Medico-Chirurgical Review, for April, 1827, that "though it *had* a great run, like all catholicons it has run its day," and that the sale of it is not one-fifth of what it was twelve months ago.

We are induced to notice these facts, because, as usually happens with the worn-out fashions of Europe, the mustard seed is now becoming a fashionable remedy here, and it has been our misfortune already to see several cases in which it has been productive of exceedingly distressing consequences.

27. *Nitrate of Silver.*—This article is coming into considerable notoriety in France, and especially in the St. Louis Hospital, as a caustic in scrofulous, syphilitic, and even cancerous ulcerations of the face, and in various cutaneous eruptions, which, says the reporter, Mr. Hutin, "have yielded, as if by enchantment, to the action of this new remedy."—*Bibliothèque Medicale, Novembre* 1826.

THERAPEUTICS.

28. *Belladonna in Epidemic Scarlatina.*—Dr. Maisier, of Burg, a district of Magdeburgh, publishes the following details. In the village of Higripp, one hundred and seventy children who had never had scarlatina escaped during an epidemic of this affection, which prevailed in 1825 in the above mentioned village. All had used belladonna internally under the following form.

Ext. of fresh prepared belladonna	gr. xv.
Dissolve in fennel water - -	℥v.
Add of rectified alcohol - - -	ʒi.

As many drops of this mixture as he had years, were given to each child morning and evening, without however exceeding fifteen drops. This prophylactic treatment was continued fifteen days; from this time the scarlatina ceased to prevail in Higripp, whilst in a neighbouring village, where the belladonna had not been used, it continued to prevail and destroyed many children.

Mr. Maisier reports also, that in 1821 he arrested by a similar measure an epidemic scarlatina, which was making great havoc at Grabow. He obtained the same result at Burg, his place of residence; of about seventy children to whom he gave the belladonna, three or four only were attacked with the prevailing disease.

Scarlatina having shown itself in November, 1824, in the town of Schlieben, district of Mersebourgh, three hundred children belonging to the college, took, morning and evening for thirteen days, the extract of belladonna dissolved in cinnamon water, three grains to the ounce. This solution was also given to all the other children of the town, at their homes. The result of this measure was, that all who had already had the scarlatina in preceding epidemics—i. e. about one-half of those who were submitted to the preservative treatment were preserved from an attack of this affection; we must, perhaps, except those who had an eruption of red spots, without accompanying fever, an eruption which the author thinks may be considered as much an effect of the belladonna, as a symptom of scarlatina. As to the other half of the children, those who had not had this disease, a small portion of them were attacked. Three of them, who had only taken the prophylactic medicine for two days, died. Of four brothers and sisters, from two to ten years of age, who slept with their parents in a very low and small chamber, the youngest, who not going to school with his friends, had not been submitted as they to the action of the belladonna, took the prevailing disease.

Not only did the above solution appear to be the cause which preserved from scarlatina, the children spared by this epidemic; but this medicine appeared also to diminish the usual intensity of the disease in question; at least the children who used it, all had it very lightly.

In fine, it appears from the researches of Dr. Wagner upon all the epidemics, in which belladonna has been administered, and those in which it has not; that *cæterus paribus*, but one child out of sixteen or seventeen has been lost when it has been used; whilst one out of three, or at least one out of six, perished when it has not.

It is to Dr. S. Hahnemann that we owe the knowledge of the properties of belladonna against scarlatina, properties which a great number of trials tends to confirm. Professor Hufeland entertains no doubts upon this subject, since the experiments he made at La Charité in Berlin.—*Journal des Progrès des Sciences, Jan.* 1827.

29. *New remedy for Asthma.*—Dr. Francesco Chiarenti having observed that those affected with asthma, are not relieved by any means as promptly as by exposure to fresh air, especially when exposed to the wind, and being himself subject to this disease, it occurred to him, to have recourse to blowing air into the lungs by means of a bellows, an instrument easily procured, and found in every house. For this purpose, he introduced the pipe of a bellows into his mouth, and blew with considerable force and for some time a great quantity of atmospheric air into his lungs. The result crowned his expectation, and by means of this simple operation, he was able in a very short time, to overcome the most violent attack of asthma. Having frequently repeated this experiment upon himself, he afterwards tried it upon other patients, and with the same success. From a large collection of facts which Dr. Chiarenti will hereafter make known, he thinks he may announce that he regards blowing air into the lungs, as a measure, not only capable of very promptly arresting an attack of asthma, but also of radically curing this disease when it is not the consequence of too deep-seated organic alterations.—*Journal des Progrès des Sciences, &c. from the Antologia di Firenze, Sept.* 1825.

We have no experience with this remedy, nor would our pathological views lead us to anticipate any benefit from its use, nevertheless, as a trial of it would not probably be attended with any inconveniences, it would be justifiable to test its efficacy.

30. *Copaiba and Cubebs in Gonorrhœa.*—In a recent number of Grafe's Journal für Chirurgie, copaiba and cubebs given in combination is spoken highly of in chronic gonorrhœa. The respectable editor of our esteemed cotemporary, the London Medical and Physical Journal, informs us, that "in two or three cases of gonorrhœa, in which the discharge was profuse, but the pain trifling, which had continued for a considerable time, the patients were rapidly cured, after having taken the copaiba and cubebs separately without any effect, by the following mixture:—℞. Bals. Copaiv. Cubebæ, āā ℥ss.; Pulv. Acaciæ ʒiij.; Aq. Cinnam. ℥viij. M. capiat coch. tria magna quater in die.—Sir Astley Cooper frequently prescribes these medicines in this form."

31. *Obesity.*—A remarkable case of obesity is recorded in the last number of Grafe's Journal für Chirurgie, which was radically cured by bleeding, the administration of purgatives, abstinence from animal food, and the use of iodine. During the exhibition of the latter remedy, the patient rapidly decreased in size. It was given in doses of twenty drops of the tincture four times a-day. One grain of iodine dissolved in one drachm of alcohol, is the strength of the tincture employed by the German practitioners.—*Lond. Med. and Phys. Journ. May*, 1827, *from Journal für Chirurgie und Augenheilkunde.*

32. *Treatment of Pulmonary Complaints.*—"In the Clinique of M. le Professeur Recamier, the hydrocyanic acid has been tried in a dozen patients who showed symptoms of chronic pulmonary catarrh, or advanced phthisis. He began by two, three, or four drops of the acid in four ounces of a simple decoction, and the patient took a spoonful of this every two or three hours. The dose has never been greater than six drops. In three of the patients, no effects were visible: the different functions did not appear to be at all influenced by it. With the greater number, however, it caused warmth, with a sense of constriction at the throat, and heat of stomach; and in some cases colic, more or less severe. In one phthisical case it was necessary to discontinue it, as it caused violent diarrhœa. The urine and the cutaneous secretions did not appear changed by it; the circulation, the sensorial and intellectual functions were not influenced. In half of the patients who used the acid, the cough was decidedly diminished, as well as the dyspnœa and difficulty of expectorating. The sputa were not changed. The patients passed better nights. In one young man the cough ceased entirely, as well as the fever; but in the beginning of winter he had a relapse, and sunk under it. With these patients, soothing and other means had failed.

"According to these experiments, it appears that the hydrocyanic acid acts chiefly on the digestive canal, and particularly when given in large doses. Indeed, in many of the cases where colic was produced, the medicine had been, by mistake, taken in too large doses.

"These facts confirm the observations of M. J Bruchenel, who in recommending this acid in pulmonary catarrh, says it should not be used till the inflammatory disposition is subdued by depletion. One can easily imagine that the digestive canal then becomes less irritable, and can bear larger doses,—even, as he says, to the extent of six or seven drops, without any bad consequences.

"Several cases of recent hæmoptysis have been treated with nitras potassæ, either alone or in combination with conserve of roses. The dose was from a drachm to half an ounce. It caused neither colic nor diarrhœa; the patients complained only of the acrid taste and sense of heat in the throat. The urine was augmented in quantity; and the spitting of blood was first diminished, and then entirely stopped in a few days. In one patient with every symptom of incipient phthisis, the spitting ceased and reappeared several times successively. Although the dose was from the first half an ounce of the nitre, incorporated with a syrup, the patient felt no inconvenience from it."—*Lond. Med. and Phys. Journ. from Revue Medicale.*

33. *Treatment of Croup.*—"Acute cases of croup," says Mr. **Porter** in his recent interesting work,* on the surgical pathology of larynx and trachea, "should be considered as examples of inflammation occurring in a particular structure, and tending to a certain given termination. The nature and uses of the organ of which this structure forms a part; the necessity of its functions being constantly performed, and the consequent impossibility of the organ obtaining repose; the importance of these functions to life, and the nature of the parts which may be affected either directly or by sympathy, in consequence of the organic derangement, must all be taken into consideration in attempting to lay down a rational mode of treatment for this formidable disease. In the commencement the disease is incipient inflammation, and the indication is, to subdue this morbid action, and prevent the production of an artificial membrane within the larynx or trachea. The second stage is after the lymph has been secreted, and then, (if we possessed the means,) the object should be to procure an artificial passage for the air, which would afford the double advantage of preserving the lungs from congestion, and allowing repose to the larynx, whilst by the common process of nature the adventitious membrane might be separated and expelled. And the last stage of croup presents itself when the functions of the brain have become impaired in consequence of being supplied with an improper quality of blood, and of course all the energies of the animal machine are weakened in proportion. The result at this period must be fatal; for even if free respiration could be restored, the brain will not be able to recover, so as again to perform its healthy functions. Of course, in conjunction with these measures, every care must be taken to remove irritation from the bowels, and to combat every accident which might even indirectly interfere with the recovery of the patient."

34. *Extract of Balsam Copaibæ in Gonorrhœa.*—**Thorn**'s *observations on the treatment of gonorrhœa.*—"Surgeons are well aware that the balsam of copaiba would be often successful in gonorrhœa, if they could prevail on their patients to continue its use for a certain time. But this they rarely can do, from the nauseous taste of the medicine, and its effects on the stomach and bowels. It would be extremely desirable that the article could be deprived of its disagreeable qualities, without injury to its medicinal; and this Mr. Thorn thinks he has done by the preparation of a resinous extract, from which the essential oil, possessing the obnoxious part of the balsam, is separated. The remaining extract is supposed to contain 'all the virtues of the copaiba.'

"Mr. Thorn divides gonorrhœa into three stages—1st. That, which occurs within twenty-four hours of the first appearance of the symptoms:—the 2d, is when the inflammatory symptoms are fully established—and the

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* Observations on the surgical pathology of larynx and trachea, chiefly with a view to illustrate the affections of those organs which may require the operation of Bronchotomy, including remarks on croup, cynanche laryngea, foreign bodies in the wind-pipes, wounds, &c. &c. By William Henry Porter, M. D. &c. Dublin, 1826.

3d is, when the inflammation has ceased, the membrane of the urethra being in a state of atony, and the only symptom being a thin mucous discharge.

"Medical men have generally been afraid to exhibit the bals. copaib. in the second, or inflammatory stage, and the first stage has often elapsed before they are consulted. It is in the first two stages, that the extract of copaiba has been found most advantageous. Mr. Thorn has related one case where the disease was cured in a couple of days, when the medicine was given in doses of fifteen grains to a scruple thrice daily. In the inflammatory stage, unless there were symptoms indicative of approaching swelled testicle, he has not hesitated to give the extract in doses of ten or fifteen grains thrice a day. In no case has he found it produce any other effect than that of relieving the scalding, and frequently doing away with this symptom, in a short time. The medicine should, of course, be continued for a few days after all the symptoms are gone. Mr. Thorn very properly combines the depletory treatment and cooling regimen with the exhibition of the medicine.

"In the third stage, that of gleet, too often dependent on some alteration of structure in the mucous membrane of the urethra, the extract of copaiba has not proved so useful. Our author speaks favourably of an injection composed of one drachm of extractum tormentillæ to six ounces of water. It has been used with advantage by Mr. Tyrrell, of St. Thomas's Hospital, and also by Mr. Alcock."—*Med. Chir. Rev. April*, 1827.

35. *Balsam Copaiba and Cubebs administered per anum as a remedy for Gonorrhœa.*—Balsam of Copaiba, especially when it has been used for some time, often proves so offensive to the stomach, that it cannot be retained. In consequence of this difficulty, Mr. Velpeau was induced to try its effect when administered by the rectum, and the result has been very satisfactory. In the January number of the Archives Générales de Médecine, he informs us that in the preceding six months he had used it in twenty cases of gonorrhœa. He administered it in doses of two drachms in a little gum water, to which laudanum was added; and the dose of the copaiba was increased in some instances to one ounce. Mr. V. has likewise administered the cubebs in a similar manner and with equally favourable results.

OPHTHALMOLOGY.

36. *Experiments upon Wounds of the Crystalline and of its Capsule.* By Dr. F. C. Dieterich.—This work gained the prize offered by the Faculty of Medicine of Tubingen for 1821–22. As we have never been so fortunate as to meet with the original dissertation, we shall take from our esteemed cotemporary the Archives Générales, for Oct. 1826, a short notice of the most interesting of the results obtained by the author.

1st. *Wounds of the anterior portion of the capsule of the crystalline lens.*—The author details thirty-six experiments made upon different animals, and particularly upon dogs. With a very slender cataract needle he tore the anterior portion of the capsule of the crystalline, without this lesion having been ever followed by capsular cataract. In fourteen experiments he simply punctured the membrane, and he observed only in one instance a white pyramidal speck upon the anterior capsule; and also in one instance only did lenticular cataract follow, owing, Dr. D. thinks, to his having wounded the lens in the experiment. In almost all the cases there is formed upon the anterior capsule a nebula of greater or less size, the edges of the puncture in general appear completely united on the disappearance of this nebula, and do not present any appearance of a cicatrix. On puncturing repeatedly the same spot, adhesions form between the portion of the capsule thus wounded and the uninjured subjacent portion of the lens. Dr. D. finally divided the anterior capsule horizontally from within outwards, in nine instances, without giving rise to capsular cataract, and only in a single instance did it occasion lenticular cataract, and in this case the animal struggled so violently during the operation that it is very probable Dr. D. thinks that the lens itself was wounded. The wound presented the same appearance and recovered in the same manner as in the preceding experiments. In seven experiments the incision was made perpendicularly, the transparency of the capsule was as little affected in these instances, but the lips of the wound gaped more, and they united more slowly. In one case he made a transverse incision and another horizontal; at the end of four days he destroyed the animal and examined the eye. He found between the anterior capsule and the crystalline an opacity which extended from the centre towards the circumference, and which resulted from a multitude of small white filaments adhering to the crystalline and its capsule. Morand and Hoin have observed in man similar cataracts, but they do not mention what produced the affection.

The author finally reports six experiments made to ascertain what influence incisions of the capsule made in many directions at the same time would have on the production of capsular cataract. In one instance only he observed on the anterior capsule a small floccula, which appeared to be formed of white parallel filaments. He produced in another case, an opacity of the lens; but Dr. D. thinks that this effect was owing to the lens being wounded, for its anterior capsule is so delicate, that in cutting it the lens must necessarily be compressed and injured; moreover, the opacity appeared very shortly after the lesion.

The small shreds of the capsule, produced by dividing it in different directions, were commonly absorbed, and there remained in their place a rounded opening of greater or less size, the edges of which, surrounded at first by a white cloud, finally united to the crystalline lens.

From all these facts, our author derives the following conclusions.

1st. That the anterior portion of the capsule of the crystalline lens contributes but very little to the nutrition of the lens, since the most considerable wounds of the former, unless accompanied with lesions of the lens itself, do not appear to have any influence upon that organ.

2d. The anterior portion of the capsule of the lens is endowed with very great vitality; indeed, after the most considerable lesions, it has always preserved its transparency, and simple transverse incisions have always healed without leaving any cicatrix. Richter[*] asserts that in fifty cases of cataract he found only one of the anterior capsule; and Henkel[†] says that he found in a person who died some time after having been operated upon for cataract, by depression, all the capsule transparent, the wound of the anterior portion of it perfectly united, and finally in the posterior capsule an opening communicating with the vitreous humour, at the point where the lens had been depressed. The cavity of the capsule was filled with a transparent liquid. Richter observed in an old man the posterior capsule of the crystalline opaque, ossified in some points and adhering to the hyaloid membrane, whilst the anterior was perfectly transparent. This fact proves again, Dr. D. thinks, that the two portions of the capsule have a distinct life and different organization; besides, it is known that the anterior is thicker than the posterior.

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[*] Bibliot. vol. ii. p. 2.

[†] Ibid. vol. v. p. 422.

2d. *Wounds of the posterior portion of the capsule.*—The difficulty is still greater of producing an opacity of the posterior capsule, than of the anterior. All the experiments made upon the posterior capsule have proved that it is as little irritable as the anterior; and although it certainly receives some branches from the central artery of the retina, and several others from the arteries of the ciliary body, Dr. D. asserts that he has never seen any trace either of inflammation or sanguineous vessels. In these experiments, the lesions of the posterior capsule produced much more frequently an opacity of the crystalline, than those of the anterior; and he concludes from this that the former is more necessary for the nutrition of the lens. The editor of the Archives, however, is of opinion, that this greater frequency of lenticular cataract is to be explained, by the greater difficulty of making the experiment, without wounding the crystalline lens. In seven experiments in which the posterior capsule was simply punctured, two did not produce any change on the eye; in three there was observed a light cloud at the bottom of the eye, similar probably to the flocculæ observed in the preceding experiments, but its deep situation prevented its being distinguished. This cloud disappeared at the end of twenty-one days. In a single instance only lenticular cataract was produced, and in one other there was iritis and suppuration of almost the whole globe of the eye. In twelve experiments he made incisions in the posterior capsule, and in eleven cases lenticular cataract was formed; in seven, the opacity of the crystalline was developed without any sign of inflammation of the eye;* in three there were slight symptoms of iritis; and in three, finally, the cataract was accompanied, at its commencement, by opacity of the vitreous humour. The punctures of the posterior capsule healed with difficulty, and the incisions never reunited.

3d. *Wounds of the crystalline.*—The experiments made upon the lens may be divided into three classes; 1st, wounds of its anterior or posterior surface; 2d, those of its centre; 3d, its displacement from its natural situation. From these experiments it appears to result that the crystalline has but a very slight degree of irritability; that its surfaces are less irritable than its centre; that lesions of its anterior surface have been less often followed by cataract than those of the posterior part; that in young animals the crystalline, almost fluid, (*presque diffluent,*) could support the most considerable lesions without inconvenience; but displacement of the lens is always followed by its death, nevertheless its capsule constantly remains transparent. Lesions of the anterior part of the lens never produced any apparent effect, neither upon the crystalline itself, upon its capsule, nor even upon any part of the eye. In seventeen experiments in which he punctured the crystalline, twelve were not followed by any changes in the eye, except always the white cloud noticed in the former experiments, in a single instance iritis supervened, but without injury to the eye; in another there was suppuration of the globe of the eye; in three cases the punctures were followed by opacity of the crystalline, of which two were attended with iritis. In nine cases of simple incision of the lens at its anterior part, four did not produce any morbid change in the eye; in the experiments the incision was made from the circumference to the centre, and not from before backwards. In five other cases, on the contrary, in which the lens was almost entirely divided, lenticular cataract followed. In eight animals he divided the crystalline in many directions at the same time. Whenever the incision did not penetrate beyond the external half of the thickness of the crystalline, it produced no change in the eye; in one case a portion of the crystalline was separated from the rest in performing the experiment. The portion thus isolated became opaque and was absorbed, whilst the remainder of the crystalline remained transparent. In another case in which the crystalline was divided, it was almost entirely absorbed without any change being manifested in it during this process; the capsule retained very nearly its natural aspect. One circumstance worthy of remark in this case was the opacity of the internal tunic of the cornea, resulting no doubt from an inflammation of the membrane of the aqueous humour. In five cases of wounds of the crystalline, made from its posterior towards its anterior surface, two did not produce any change in the eye, but the wounds were very superficial. The eye was destroyed by inflammation in one case, and in two others there was lenticular cataract. In eleven experiments in which the crystalline was displaced, three only were not followed by lenticular cataract; in all the others the crystalline became opaque, attended by violent inflammation of the iris and ciliary bodies. Superficial wounds of the crystalline, when they were not accompanied by displacement of this organ, or any lesion of the surrounding part, were never followed by any appreciable change in the eye, even when they penetrated to a quarter of a line in the thickness of the crystalline. Some days after the experiment, these wounds were completely cured. Dr. D. thinks that lenticular cataract and inflammation, more frequently resulting from wounds of the posterior portion, than of the anterior part of the lens, ought to be attributed, not to any difference of structure in the two surfaces, but rather to the much greater difficulty of reaching the posterior face of the crystalline, without wounding the neighbouring parts or deranging this organ. Deep wounds, particularly those which penetrate to the centre of the lens, were in all the experiments followed by lenticular cataract, by iritis, by inflammation of the globe of the eye; effects which ought probably to be attributed rather to the moving and derangement of the capsule and neighbouring parts, than to the wound of the crystalline itself. But Dr. D. says he is unable to explain how inflammation of these parts produces cataract, since he has never been able to discover any trace of sanguineous vessels either in the crystalline or in its capsule, even in cases where the neighbouring parts were engorged.

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* Did Dr. D. expect to see red vessels? For our part we are perfectly convinced, that the colourless vessels of the eye can pour out coagulable lymph, and would consider the occurrence of opacity as sufficient evidence of the existence of inflammatory action. H.

4th. *Application of concentrated acids and of ethers, directly and in the form of vapour.*—The muriatic, sulphuric, and nitric acids produce nearly the same effects upon the eye. Their vapours caused scarcely a superficial inflammation of the cornea, and sometimes also of the conjunctiva. The direct application of these acids to the cornea has sometimes rapidly destroyed the superficial lamina of that membrane; at other times it has been completely penetrated. The inflammation of the internal parts of the eye has been rarely very intense, and the destruction of the globe by suppuration still more rare. When the ulceration did not occupy the whole thickness of the cornea, the cure took place rapidly, and the cicatrix was generally transparent. When the acid had destroyed the whole thickness of the cornea, a circle of vessels were seen to form around the part affected, and the loss of substance was repaired by a kind of membrane nearly transparent. The action of the phosphoric acid upon the eye was more feeble than that of the three preceding, and that of the acetic acid the weakest of all. The eyes of young animals were more sensible to the action of acids than those of adults. Dr. D. never observed cataract to follow these experiments.

5th. *Evacuation of the aqueous humour in incipient lenticular cataract.*—When the opacity of the crystalline is considerably advanced, the evacuation of the aqueous humour never restored its transparency, but only appeared to retard its progress. If, on the contrary, the opacity is slight, this operation, often repeated, causes it to disappear completely. Indeed, on examining the animals after killing them, the lens was always found transparent. But Dr. D. asks, did the opacity exist in the crystalline? or even admitting that it did, might it not disappear spontaneously? Although this may be the case, he adds, his experiments prove one very important fact, which is, that in inflammation of the eye, and, above all, of the iris, the evacuation of the aqueous humour always aggravates the disease, and has been followed by suppuration of the globe of the eye. In all cases where the capsule of the crystalline was opened carefully, and where the inflammation of the eye was moderate, the evacuation of the aqueous humour has always favoured the absorption of the crystalline lens. From these facts our author draws the following conclusions:—1st, in incipient lenticular cataract, it is very probable that the reiterated evacuation of the aqueous humour will arrest the development of the disease, or favour the absorption of the crystalline; 2d, that this mode of treatment is particularly applicable to cases of operations of cataract in which some detached portions of the crystalline are not absorbed; 3d, that this operation is always contra-indicated, where there exists inflammation of any part of the eye. In performing this operation, Dr. D. advises, 1st, not to puncture the cornea with a needle, but with a very sharp-pointed lancet or good cataract knife, because an incision made with these instruments remains longer open, which obviates the necessity of a new operation; 2d, not to make the puncture at the inferior part of the cornea, in order to prevent the sudden flow of the aqueous humour, which is generally followed by procidentia of the iris, or its adherence to the cornea. The incision ought to be made as near as possible to the external border of the cornea, in a perpendicular direction, and to the extent of a line. If it is necessary to repeat this operation, it ought to be performed at some distance from the first, and never until the previous incision has healed.

Such are the principal results of the interesting experiments performed by Dr. Dieterich, and while we unite with the editor of the Archives in regretting that Dr. D. has not extended his researches into the subject of the reproduction of the crystalline lens, we must express our sense of the obligation which we believe the profession to be under to him for what he has done, and our conviction that his experiments will be productive of important practical results in the surgery of the eye.

37. **Watson** *on the effects of Inflammation and Injuries upon the Humours of the Eye.*—1. "*Inflammation of the crystalline lens from injury.*—When the lens is injured, and its capsule ruptured or torn by a sharp instrument, without any of these parts being detached from their vascular connections, they inflame, the neighbouring parts become affected, semitransparent albuminous matter is poured out from the opening into the chambers of the aqueous humour, and the lens becomes opaque.

The injury, when slight, seems to be repaired by a process of nature, of which the effusion of lymph is a part; but an opaque state of the injured part remains. In cases of cataract, when the lens is neither in a dead nor fluid state, precisely the same effects result from the laceration of the capsule and lens with a needle, without displacing them from their vascular attachments. Hence such an operation is quite unavailing.

2. "*Death and solution of the lens from injury, the capsule retaining its vitality.*—If the lens receive such an injury as detaches it, (within its capsule,) from its vascular connections, the death of this body appears to be the consequence. The capsule, though injured, if not torn from its vascular attachments, retains its vitality and transparency. The lens, however, becomes opaque, and, when its capsule has been opened, is exposed to the action of the aqueous humour. In such circumstances, the lens is dissolved and absorbed with the aqueous humour—rapidly and completely in young subjects, more slowly, and generally imperfectly in elderly persons. These changes could not take place unless the lens had previously lost its vitality; for the solvent power of the aqueous humour cannot be conceived to be so great as to enable it to act chemically upon a living part.

"After the removal of the lens from its situation by an operation or injury, the capsule retains it transparency, but the wounded edges of it contract, from elasticity, towards its circumference, when the vessels connecting it with the ciliary processes have not been injured.

"These changes are frequently induced by operation to remove the lens when opaque—more especially in young subjects. In such cases, therefore, as well as in cases of accidental injury, the changes described may be observed. The transparent state which the capsule retains, is amply illustrated by the cases in which an opaque lens has been successfully removed from this membrane, whether by solution, depression, or extraction.

"Probably few cases occur where the lens is detached from its union with the capsule by an injury, without the capsule being at the same time either wounded or detached. I have not observed any such cases."

3. "*Death of the lens and its capsules from injury and from disease.*—When an injury inflicted on the eye has been of such a nature that the crystalline lens and its capsule have been detached from their connections, they lose their vitality—they become opaque, and are quite in the state of a foreign body in the eye. Though by such injuries these parts are sometimes quite removed from their natural situation, the vessels by which they are nourished may be torn asunder, the lens and its capsule become dead, and yet they often remain *in situ* from the attachment of the posterior part of the capsule to the hyaloid membrane; a very slight movement being sufficient to rupture the slender vessels surrounding the capsule of the lens.

"In many cases where the lens and anterior part of its capsule evidently become dead, the posterior part of the capsule seems to retain its vitality and transparency; showing that this latter part is probably nourished by a different set of vessels from which it is not so easily detached, owing to its close connection with the hyaloid membrane.

"The well-known fact that the lens and anterior part of its capsule are frequently in a diseased state, while the posterior part remains sound, strengthens the probability of this conclusion.

"When the capsule of the lens has been ruptured or opened by the injury, the lens is subjected to the action of the aqueous humour, and may undergo the changes of solution and absorption mentioned in the preceding section. The dead capsule, however, not being so easily acted upon by the aqueous humour, remains, becomes opaque, shrivelled, and contracted. In the course of time, the more soluble parts of it, in some cases, seem to be removed by the aqueous humour, while those parts remain in the form of detached shreds which seem to be insoluble in that fluid. When subjected to the action of the aqueous humour, the lens does not always dissolve; in elderly persons, when hard or firm in its texture, it seldom becomes completely dissolved.

"Precisely similar changes to those just described are produced by operations for cataract, when in the performance of them the capsule as well as the lens has been torn from its vascular connections, the opaque and shrivelled capsule which remains having attachments so slight, that in many cases it has a tremulous motion in the eye.

"When the lens and its capsule have been detached and deprived of their vitality, without the capsule being opened, as by a blow upon the eye or by disorganizing inflammation of the globe, they have, in some of the cases which I have seen, rolled about in the eye for some time semitransparent and unchanged, in others have become quite opaque.

"In many instances that have come under my notice, the lens and capsule had apparently become dead after an attack of inflammation, and in some without any evident cause, after which these parts remained *in situ* and became of a yellowish-white colour. In one of these cases, I opened the capsule with a needle, introduced into the eye, nine years after the patient had lost her sight, when I found the capsule adhering to the iris, tough, opaque, and filled with a milky fluid.

"When the lens inclosed in its capsule becomes dead, probably by the lapse of time, it becomes fluid from decomposition.* After this has taken place, the capsule appears in some cases to have given way, and discharged its contents into the aqueous humour, by which it is absorbed, leaving the opaque dead capsule..

"The death of the lens, whether spontaneously or by purulent ophthalmia at the period of birth, is probably in many cases the cause of what has been termed *congenital cataract*, which has burst into the aqueous humour, or been found in a fluid state when operated upon.†

The foregoing observations, says Mr. Watson, point out several important circumstances to be attended to, in performing operations for cataract.

"1. When it is desired to make the lens undergo solution in the aqueous humour, it is necessary to detach the lens from its vascular connections by the operation, as well as to wound it.

"2. When the capsule of the lens is transparent, the detachment of it from its vascular connections is carefully to be avoided, that it may retain its transparency and contract towards the ciliary processes, instead of becoming opaque and shrivelled into the centre of the pupil, which it does when so detached.

"3. That the detachment of the lens inclosed in its capsule, before opening the capsule, is carefully to be avoided, as these parts, unless imbedded in the vitreous humour, may float about in the eye unchanged." *Ed. Med. and Surg. Journ. Oct.* 1826.

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* In making dissections, upon opening the capsule, after the parts have lain some time, I have found the lens converted into a milky fluid.

† What has been termed congenital staphyloma may generally be traced to have been caused by ophthalmia after birth.

38. *Experiments upon the Reproduction of the Crystalline Lens.* By Messrs. COCTEAU and LEROY D'ETIOLLE, Doctors in Medicine.—"These experiments are six in number, and prove contrary to the received opinions, that the crystalline lens may be regenerated. We shall extract the first and the last of these experiments.

"On the 27th of July, we removed the crystalline lens from the right eye of a rabbit, of three months old. The incision was made in the superior part of the cornea, on account of the greater ease with which the operation could be performed, and because, as the aqueous humour could less readily escape through the wound, it might enter the cavity of the crystalline, and prevent the sides of its cavity from uniting; to which we in part attributed the non-production of the crystalline. The iris protruded through the wound, and was irreducible. A little blood escaped during the operation upon the left eye. The iris protruded also in this eye, and was equally irreducible with the iris of the right.

"The animal being left to itself did not appear to suffer: it kept its eyes opened, and walked perhaps with a little less steadiness than before the operation. No attempt was made to ascertain the degree of vision, from the fear of augmenting the causes of inflammation. At night he lay in the darkest place of his pen, and his eyes were half open, and watery.

"On the 28th the right eye was closed, and the eyelid considerably swelled and red, especially at its edge. The conjunctiva was injected. A curdled purulent matter was copiously discharged, and the hairs bordering the eyelashes fell off. The left eye was wide open, the circumference of the wound of the cornea was slightly opaque, the iris was protruded, and had undergone no alteration; the portion of the pupil over which the opacity of the cornea did not extend, was of a beautiful black colour. He walked firmly, and had a good appetite.

"On the 30th the right eye was occasionally opened, and the cornea was very opaque in the neighbourhood of the incision; there was considerable swelling of the protruded iris, and the conjunctiva acutely inflamed, afforded an abundant purulent discharge.

"On the 4th of August the animal appeared to suffer much pain in the right eye, which was very prominent: the cornea was dull and opaque over its whole surface; and the iris was covered with firm granulations. The animal ran and climbed over different obstacles without difficulty.

"He was killed on the 9th of August, by injecting air into the external jugular vein. The eyes on examination presented the following peculiarities. The eyelids of the right eye were swelled and excoriated, and the vessels of the conjunctiva deeply injected. The protruded iris was covered with purple granulations; the pupil was irregular; the cornea of a dull white colour; the edges of the wound presented almost through their whole extent a kind of exfoliation analogous to that of tendons; and there was intimate adhesion of the iris. The sclerotica at the place of its union with the cornea was thickened; its section grayish, and its consistence cartilaginous; the aqueous humour transparent and limpid; the iris, the ciliary body, the crystalline membrane, and the anterior layer of the hyaloid membrane, were inextricably confused, but without any appearance of disease; the vitreous humour had experienced no effects from the inflammation of the neighbouring parts.

"The cornea of the left eye was slightly opaque near the situation of the incision; the aqueous humour was transparent and limpid; the iris adhered to the edges of the wound, and rendered the pupil rather irregular. An incision into the crystalline membrane, which exhibited a whitish prolongation across the pupil, gave exit to *a crystalline lens;* the consistency of which, a little greater at the centre than the circumference, was less than in its natural state, and nearly resembled that of the eccentric portions of the primitive crystalline; the posterior layer of the capsule, which prevented all communication with the vitreous humour, left no doubt upon this reproduction of the crystalline; the other parts of the eye were perfectly sound.

"April 6th. Hitherto the animals had been kept only a month or six weeks after the operation; but considering, that by permitting a longer time to elapse, before they were destroyed, a more perfect crystalline might be obtained, we determined to put the supposition to the test of experiment. Accordingly, the extraction of the lens was effected on two rabbits, on the 6th of June, 1825; and at the end of a month we examined them while alive; one of them saw at this time very perfectly with both eyes; vision was less complete in the other. This last was killed a few days after, by mistake, and the eyes were not examined. The former was kept till the 18th of November, *i. e.* more than six months. The eyes were dissected in the presence of Mr. Federa. '*The crystalline capsules were perfectly transparent, and no cicatrices were visible; they contained lenses as large and as consistent as those which had been extracted.* To render ourselves more certain, they were plunged into boiling water, *and became opaque, hard, and friable, precisely as the primitive crystalline;* but the lamellated disposition was only evident in the exterior layers."—*Lond. Med. Repos. May,* 1827, *from the Journal de Physiologie, Jan.* 1827.

39. *Mackenzie on Rheumatic Ophthalmia.*—In the January number of the London Medical and Physical Journal is an interesting paper by Mr. Mackenzie, on rheumatic ophthalmia. In his general views of the nature of the disease, and in his estimate of the value of the remedies recommended for its cure, he agrees with the author of a paper on the same subject, in our February number.

We extract Mr. M.'s observations on the treatment. "1. *Blood-letting.*—In plethoric persons, with a full and hard pulse,—indeed almost always in rheumatic ophthalmia,—it is necessary to take away blood from the arm, and to apply leeches to the temple. I feel myself obliged entirely to differ from Mr. Wardrop, in his opinion that patients affected with rheumatic ophthalmia neither bear bleeding to a great extent, nor are alleviated by this remedy. Mr. Wardrop has even stated the little relief afforded by bleeding in this disease, as one of its diagnositic characters. This entirely disagrees with my experience, and is, I apprehend, altogether contrary to what we observe in other rheumatic affections. Bleeding, both general and local, I have uniformly found extremely useful in rheumatic ophthalmia, and I believe it ought to be employed in almost every case. The first night after taking fifteen or twenty ounces of blood from the arm, the patient is generally so much relieved as to get some sleep, even though no other remedy be employed. Next day, I am in the habit of applying a dozen of leeches to the temple; but, if the pulse be still strong and full, and the circum-orbital pain not relieved, I first repeat the venesection. I regard blood-letting as of the most urgent necessity in this disease: in no species of ophthalmia is this remedy so necessary, or so remarkable in its good effects.

2. *Calomel and Opium.*—In rheumatic ophthalmia, I have never failed to find this combination highly useful, in checking the circum-orbital pain, restoring the digestive system to its healthy state, exciting the skin, and dissipating the redness of the eye. Two grains of calomel, with one of opium, are to be continued every evening till the gums begin to be

affected, when the calomel may be omitted, and ten grains of Dover's powder substituted in place of the opium. Mr. Wardrop states that mercury, when given in this disease so as to produce ptyalism, aggravates more than mitigates the symptoms. This does not correspond with what I have observed. I do not, indeed, push the mercury in order to affect the mouth, but I have not witnessed any bad effects from the mouth becoming sore.

3. *Opiate Frictions.*—The patient experiences great relief from carefully rubbing the forehead around the orbit, with warm laudanum. Beer used opium moistened with saliva. Friction with either of these substances assuages the pain, if already present; but ought rather to be employed about an hour before the nocturnal paroxysm is expected, which it will greatly lessen, and sometimes entirely prevent. In chronic cases, equal parts of laudanum and tincture of cantharides may be used for this purpose.

4. *Blisters,* repeatedly applied behind the ear, and to the temple, but above all a large blister to the nape of the neck, will be found useful.

5. *Vinum Opii.*—Applications to the eye itself have but little power over this disease. Those which are so useful in other ophthalmiæ, are often hurtful in the rheumatic. The lunar-caustic drops, for instance, which may be regarded as specific in catarrhal ophthalmia, are in the present disease decidedly injurious. When all the febrile and painful symptoms, however, are gone, and little more than lingering redness with weakness of the eye remains, the vinum opii in a diluted state will be found beneficial, dropped upon the eye twice or thrice, or the pure vinum opii once a-day.

6. *Belladonna.*—During the whole course of rheumatic ophthalmia, the pupil of the affected eye ought to be kept under the influence of belladonna, either by smearing the moistened extract over the eyebrow and eyelids every evening at bedtime, or by infusing one drachm of the extract in each ounce of the laudanum which is used for rubbing the head.

7. *Purgatives.*—A laxative glyster every morning, or a small dose of Epsom salts, may be given to obviate the constipating effects of the opium.

8. *Sudorifics.*—The warm pediluvium at bedtime, with warm diluent drinks towards evening, operating along with the opium, will in general sufficiently fulfil this purpose. Mr. Wardrop recommends antimonial powder, and Beer employed guaiac, for exciting the skin in this disease.

9. *Tonics.*—Small doses of cinchona, or of the mineral acids, will be found advantageous in the chronic stage of the disease, and during convalescence. In old mistreated cases, Fowler's solution gives great relief, in doses of from eight to twelve drops thrice a-day.

The first, second, third, and sixth of the remedies now enumerated, are to be had recourse to in the first instance. I have never seen these remedies fail in any acute case, however severe. Nor have I seen any permanent sequelæ left, when the disease was treated with bleeding, calomel and opium, opiate friction, blisters, vinum opii, and belladonna."

40. *On the use of Bark in Iritis.* By William Wallace, Esq. of Dublin.—"Of the numerous sequelæ which the prevailing fever of this country exhibits during the state of convalescence, there are none more remarkable, nor more frequent, than a peculiar inflammation of both the deep-seated and superficial textures of the eye. This inflammation, from the symptoms which it presents, is entitled equally to the denomination of iritis and choroiditis. It being my intention to publish a full account of this ophthal-

mic disease, so soon as I shall have leisure to arrange my notes on the subject, I do not deem it necessary to enlarge now upon this point.

"As iritis, whether symptomatic or idiopathic, is generally treated by mercurials, with or without antiphlogistic remedies and counter-irritants, a similar process of cure has been adopted in the iritis which succeeds fever. Such were also the remedies I employed in this disease, until I found their inefficiency on very many occasions; and, having been thus led to treat the affection upon other principles, I acquired the knowledge of the singular property of Peruvian bark to arrest this inflammatory action. The discovery has been made known by me extensively in this city, partly among pupils during the course of clinical instruction, and partly in conversation to professional friends connected with hospitals; and it gives me great satisfaction to be able to state that it has been fully confirmed by others.

"That bark should have the power of subduing a violent and disorganizing inflammatory action, will appear incompatible with the existing views of the action of this remedy, and with the prevailing opinions of the nature of inflammation; and I know, from conversations with my professional brethern here, how difficultly this treatment will be reconciled to the prevailing routine practice. Here it may, however, be remarked, that it is not very long since the valuable discovery of the power of mercury, to correct certain inflammatory actions of the eye has been generally admitted; nor was this discovery less in opposition to the then existing views of many practitioners, than that is which I now make known. I shall not disguise my confident hopes, that this discovery of the power of bark will hold a very high rank in importance. Its value will not be confined to the disease in question. It is calculated to extend our views of the powers of this remedy, and to improve our treatment of many forms of inflammation. But, upon all these points, I shall enlarge on a future occasion.

"Respecting the mode of exhibiting the bark, there is little to be said. If the inflammatory action be very violent, and the pain very distressing, I do not venture to employ the remedy without previous purging and bleeding, either topical or general. I am, however, by no means certain that this precaution is necessary; and I do not spend more than a day in this preliminary treatment. While the patient is taking the bark, his bowels must be regulated by any common gentle purgative. The bark in powder, and the sulphate of quinine, I have found equally effectual. It is the pale bark which is vended in general by druggists here. The dose of the powder which I employ, is about half a drachm three times a-day: this I direct to be taken in milk. Whenever I use the sulphate of quinine, I prefer the form of solution, which should be taken in such a quantity, that the dose of the quinine shall be about two grains three times a-day. Instances will occur, in which larger doses must be given than those which I have mentioned.

"It may be proper to observe, that I do not assert that the disease in question may not, on some occasions, be controlled by mercury, combined with evacuants and counter-irritants; for I have known patients recover under this treatment. But, in a very large proportion of these cases, such remedies will not avail; and in many in which they may ultimately prove successful, a prolonged treatment of some weeks may be required. Whereas, in a few hours, I may say, the morbid action is suspended by the bark; and the organ, which may have been for weeks in a state of disease, manifested by an almost complete suspension of its functions and great alteration of structure, shall be in a few days speedily and effectually restored to health. Whether this peculiar form of ophthalmic disease, which is now, and has been for a long period, so prevalent in Dublin, occurs in other countries; or whether it be even a frequent occurrence in Ireland, except in the metropolis, I have not as yet had any means of ascertaining. I therefore gladly take this opportunity of soliciting, with a view to a further publication, contributions from my professional brethren, not only in relation to the power of the remedy, but also regarding the history and symptoms of the disease."—*Lond. Med. and Phys. Journ. May*, 1827.

41. *Cubebs in Purulent Ophthalmia.*—Mr. Velpeau, chef de clinique de l'hopital de perfectionnement, informs us in his clinical report in the Archives Générales for December, 1826, that Mr. Roux has been in the habit for the last two years of using the cubebs in those cases of purulent ophthalmia, which he supposes to be produced by the gonorrhœal poison. One case is recorded, that of a young man of eighteen. The disease affected his right eye, the eyelids were enormously swelled, the conjunctiva exceedingly inflamed, puffed up, inverted, and of a very decided coppery colour, profuse lachrymation, and "all the symptoms of a very intense venereal ophthalmia." We should have been much obliged to Mr. Velpeau, if he had informed us by what symptoms he is enabled to distinguish purulent ophthalmia, produced by gonorrhœal matter, from that produced by other causes. The patient constantly denied ever having had the venereal disease, or having had connection with any one affected with it; nevertheless Mr. V. says that it appears evident to him that the patient was affected with gonorrhœal ophthalmia. We have no evidence however furnished us of this; the inflammation was violent, but that certainly is no proof. This however is of little consequence, as relates to the value of the remedy, since we do not believe there is any thing specific in the inflammation produced by that poison. In the case we are noticing, Mr. Roux prescribed the powdered cubebs in the dose of one drachm three times a-day, and Mr. Velpeau thinks with advantage. The symptoms were speedily ameliorated, the lachrymation ceased on the fourth day, and although the cornea was perforated, the sight eventually was in part re-established.

We are not quite prepared to recommend an imitation of this practice, at least, we would not trust to it to the exclusion of other and more important remedies. However, the copaiva has been prescribed at the Pennsylvania Infirmary for Diseases of the Eye, in a few cases of purulent ophthalmia, and with apparent benefit, and probably the cubebs may occasionally be used with like advantage.

SURGERY.

42. *Sir Astley Cooper's Observations on the Diseases of the Nail and Unguel Gland.*—"The nail sometimes grows broader than it ought, and it then produces ulceration by the pressure of its edge, which is followed by an irritable and fungous granulation. As this state arises from the breadth of the nail, and its consequent pressure, it sometimes continues for months, or even for years; yet it will yield to proper treatment in two or three weeks. The common mode of relief consists in cutting a notch in the centre of the nail; in scraping its extremity thin; in putting it frequently in warm water, and in putting a piece of lint under its projecting

edge: but this mode often fails in producing a cure, and frequently is only a temporary relief. In obstinate and difficult cases of this unnatural growth of the nail, I have, for thirty-five years, recommended and practised the plan of cutting away the edge of the nail with scissors, from its extremity to its root; by which a cure is often produced in a few days, and in the worst cases in two or three weeks. A poultice only is afterwards required.

"In diseased states of the constitution, the ungual gland, the secreting surface which produces the nail, gets into a morbid state, and, instead of a healthy nail being formed, it throws out one which is black, everted, unadherent, and which so irritates the vascular surfaces as to produce an irritable, sloughing, and very painful sore, which renders the patient lame, so as to prevent his gaining his daily bread. As this is a constitutional as well as local disease, it becomes necessary to employ constitutional and local means of treatment. My usual plan is to give a grain of calomel, with a grain of opium, night and morning, with the decoctum sarsaparillæ compositum; and to apply the liquor calcis ℥iv. with calomel ʒj. by means of lint with oiled silk over it. This plan often succeeds; and, if it does not, it destroys the predisposition to the disease.

"After giving these constitutional remedies, if the sore does not heal, I have sometimes applied a blister to bring off the nail, and alter the action of the ulcer. But in hospital practice, where persons are anxious to return to their labour, and to have their disease quickly and effectually removed, I have always dissected away the secreting surface which produces the nail, and prevented the possibility of a recurrence of the disease."—*Lond. Med. and Phys. Journ. April*, 1827.

43. *Amputation of the Lower Jaw at its Articulation.*—In the fourth volume of the Dublin Hospital Reports, Mr. Cusack has detailed four cases, three of which were successful; he has the credit of being the first British surgeon who has performed this formidable operation. We select one of the cases. "M. P. ætat 24, of a pale and delicate appearance, was admitted into the hospital, May 27, 1825. She stated that she had enjoyed general good health until she attained her nineteenth year; about which period she was seized with a very severe pain in the last molar tooth of the right side of the lower jaw; her sufferings were sufficient to induce her to submit to its removal; the extraction was effected with much difficulty, and was succeeded by so much inflammation, that she was unable to open her mouth for several days. About three weeks afterwards she felt a small tumour in the situation lately occupied by the tooth; it was firm, and resistant to the touch, but not insensible, some uneasiness being complained of after pressure. The progress of the disease was at first slow, the tumour having scarcely attained the size of a walnut at the expiration of three months. In the course of the first year, the swelling acquired just sufficient bulk to become visible externally; its advancement was marked by frequent paroxysms of acute pain, which were occasionally so severe as to deprive the patient of rest. During the second year the swelling continued gradually to extend along the bone towards the chin; the molar teeth having successively become loose and painful, were removed. In the course of this year the bone snapped across, about the situation of the canine tooth, in the attempt to chew a hard crust; and the pain attendant upon this accident was so excessive as to cause the patient to faint. From her statement it would appear that the fractured extremities became united at the expiration of five weeks; but the union was accompanied by such an extension of the disease as completely

to involve the part which had sustained the injury. It is unnecessary to detail minutely the various additions to her sufferings, occasioned by the gradual extension of the disease. During the year previous to her admission, she was so much incommoded by the size and weight of the swelling, that she was compelled to confine herself to her chair. Deglutition, respiration, and articulation, were all more or less impeded; and her health obviously impaired. The uterine secretion was suspended; she lost her appetite; became pale and emaciated, and suffered from occasional attacks of hæmatemesis.

"Previous to admission into the hospital, her general health became so much deranged that she was obliged to confine herself almost entirely to bed. On examination, I found that the tumour had engaged the entire extent of the jaw, from the articulation on the right side to the dens cuspidatus on the left; the principal bulk of the swelling extended itself laterally, inclining outwards and downwards, and distending the soft parts so much that they appeared on the point of giving way; inwards it occupied the entire sublingual space, passing the median line, and touching the ramus on the opposite side, by which portion the tongue was elevated, and its tip brought into contact with the *velum palati*. The disease had extended to the articulation, and the coronoid process was so much expanded as completely to prevent any motion of the affected side; while the mouth, which was kept permanently open, gave passage to a continued stream of saliva. This tumour evidently differed in structure from those I had previously met with; it was more dense, the surface being smooth, and yielding to the impression of the finger; but its parieties possessed so much elasticity as immediately to resume the same uniformity of aspect, upon withdrawing the pressure. The incisor teeth still remained, and, in consequence of their looseness, occasioned much distress. The general health, as I have before observed, had suffered considerably, but little nourishment could be taken, and that with much difficulty.

"This was evidently a most formidable case; the constitution of the patient was broken down; the tumour extensive; the processes enlarged so as to prevent motion; and the integuments so much distended as to leave ground for apprehension that they would not be able to preserve their vitality after an operation. On the other hand, the solidity of the tumour seemed to afford an assurance of greater facility in separating it from its surrounding connections.—I was supported by the favourable opinions of my professional brethren, and emboldened by previous success.

"On Friday, June 3d, she submitted to the operation; the preliminary arrangements for which were made in the manner before described. The mental portion of the bone was divided by the chain saw, at the situation of the first molar tooth of the left side. This step of the operation was rendered tedious by the restlessness of the patient; she depressed her head towards the sternum, and offered much resistance to the use of the saw. The transverse incision through the cheek was inclined upwards in the direction already noticed. A third was made over the articulation, and continued downwards to unite with the second. The division of the soft parts had been hitherto attended with a profuse hæmorrrhage, much exceeding what had been contemplated. The vessels however contracted speedily on being divided, yet the total quantity of blood lost was considerable. After the separation of the cheek, and the complete exposure of the anterior surface of the tumour, the bone was found so immoveably fixed from the expansion of the processes, that I could not venture further in the dissection, without danger of wounding the vessels beneath the base of the jaw. In this dilemma, I divided the tumour about an inch below the articulation, and quickly separated the portion included between the two sections: ample opportunity was thus afforded for clearly ascertaining the nature of the difficulties I had still to encounter. So completely had the coronoid process filled up the infra-zygomatic space, that the detachment of the insertion of the temporal muscle proved both difficult and tedious: after it had been separated, I proceeded to the removal of the condyle. Having fairly exposed the anterior surface of the articulation, I perforated the capsular ligament, and finally completed a tedious and disgusting operation, during which the patient had fainted several times, and rejected the contents of her stomach. The integuments having been replaced, and the wound dressed in the usual manner, she was removed to her ward and placed in bed; when she exhibited but feeble signs of animation and remained in the same state of exhaustion for several hours. Her countenance was pale, skin cold, and pulse scarcely perceptible. Reaction took place but slowly;—in twenty-four hours after the operation the lip and cheek were still cold; yet from this period little trouble was experienced; a mild inflammatory action succeeded, and in six weeks she was restored to her friends, fat and healthy.

"It was remarkable that in this case the cheek still retained a natural prominence, a newly-formed structure appearing to occupy the place of the bone, and scarcely any perceptible deformity resulting from the loss of so large a portion of the lower jaw."

44. *Formation of an Artificial Urethra, on account of a Malformation of the Genital Organs.*—"The subject of this case was an infant with malformed penis. The gland was merely a rudiment; the prepuce was wanting; the extremity of the gland, with a trace of an urethral orifice, was found at the inferior edge of the corona glandis: the penis was of its usual length, but there was no opening on its surface. An incision made upon the cleft which indicated the orifice of the urethra, conducted to no result. On the third day, the subpubic region was rather tense; Mr. Rublach then made an incision into the canal of the urethra under the gland, and penetrated with difficulty, in the direction of the canal through three-fourths of its length. A few drops of blood only followed; the abdomen swelled more, and the infant was restless; at night, a quantity of urine was suddenly expelled by the rectum, and the tension of the abdomen ceased. The next day, Mr. Rublach proposed to make an artificial canal through the penis, and he obtained a silver flexible sound, the end of which was flattened, and had a cutting edge. This sound pushed with difficulty in the direction of the neck of the bladder at length entered its cavity: the urine flowed immediately after; the sound was left in for some time; and the urine, ceasing to flow through the rectum, was discharged by the artificial passage which had been made by the operation."—*From the Magazin fur die Gesammente Heilkunde; in the Bulletin des Sciences Médicales, for Fevrier*, 1827.

45. *Mode of stopping Epistaxis.*—"A young man, nineteen years of age, bled from the nose two days so profusely, that he fainted several times. Mineral acids, ice to the nape of the neck, &c. were tried, but without stopping the flow of blood. Dr. Brunner was called in on the third day, and he blew up powdered gum arabic through a quill. the hemorrhage ceased directly."—*Hufeland's Journal.*

46. **Earle's** *Case of acute Traumatic Tetanus, treated by the Hydrocyanic Acid.*—A man aged twenty, while wrestling, wounded the sole of his foot with a blunt rusty nail. Five days afterwards he perceived a slight pain and stiffness in the back, and the usual symptoms of tetanus gradually developed themselves. On the next day he was admitted into St. Bartholomew's hospital, and he was pretty freely purged. The next, the seventh day of the disease, the patient was decidedly worse, and the fatality of the disease, when treated by the common remedies, and the powerful influence of the hydrocyanic acid on the nervous system, induced Mr. Earle to employ that preparation; accordingly it was given in a dose of five drops, and the quantity increased to twenty drops, which dose was repeated at an interval of two hours; thirty ounces of blood were taken from the patient's arm in the course of the day.

He gradually got worse, and died about midnight. The following were the appearances on dissection. "The pia mater was, perhaps, a little more vascular than natural; there were more red spots in the medullary substance of the brain than are met with in its healthy state; the spinal cord was healthy. There was extensive inflammation of the left pleura; the left lung was gorged with blood, and much inflamed. The sympathetic nerve, where it was in contact with the pleura, was very vascular. The right pleura, lung, and sympathetic nerve, were not so much inflamed as the left. There were several spots of effused blood between the pleura and diaphragm on the left side; also between the pleura and the aorta. The aorta was filled with fluid blood, its external coat was perfectly healthy. There was about an ounce of fluid in the pericardium. That part of the pericardium which is reflected over the right auricle was somewhat inflamed, and under it were several spots of effused blood; the right auricle and ventricle were filled with coagulated blood.

"In the abdomen were observed recent adhesions between the stomach and liver. The peritoneal covering of both organs was much inflamed; as was the liver itself, and the gall-ducts in the substance were filled with bile. The spleen was tuberculated and inflamed. The mesenteric glands were numerous and enlarged. The mesentery was inflamed. The mesorectum had several spots of effused blood between its layers, and was inflamed. The alimentary canal was healthy; the stomach and small intestines contained mucus; the large intestines were filled with a very offensive dark-coloured feculent matter. All the nerves in the abdomen looked healthy.

"At the bottom of the wound in the foot was a small piece of skin about the eighth of an inch in diameter, which had been apparently pushed in by the nail. The internal plantar nerve, before it had divided into the two branches which supply the great toe and the toe next it, was completely torn through, and each extremity of the nerve was bulbous and vascular: every other part of the nerve appeared perfectly healthy. The theca binding down the tendons of the great toe, was wounded."

In a disease so terrible as tetanus, it is justifiable to employ any plan of treatment that holds out the slightest ground for hope; and Mr. Earle thinks that the hydrocyanic acid deserves a further trial, inasmuch as the remedy can scarcely be said to have failed in this case, as it was not given in sufficient doses sensibly to affect the nervous system. Mr. Earle also suggests the employment of strychnine in doses to affect the nervous system, and remarks that he "should like some experiments to be tried upon animals affected with tetanus, of the effect of carbonic acid, administered to an extent to produce temporary suspension of animation, which might be restored by artificial respiration."—*Lond. Med. and Phys. Journ. April*, 1827.

47. Mr. Lisfranc *on Ulcers, simple and varicose.*—"The distinguished surgeon of La Pitié has lately reported, through the medium of his pupil, Mr. Klimatis, an interesting memoir on ulcers, more especially of the lower extremities. Mr. Lisfranc does not accord in sentiment with those who attribute the frequency of ulcers on the legs to weakness of the vital powers in those parts. He places the cause of this affection to the account of 'inflammatory irritation,' determined by remora of blood in the saphena vein, which vessel presents between the malleolus and head of the tibia in most instances no valvular apparatus. When any valves are found they are never seen between the malleolus internus and the calf of the leg. 'It is precisely in this last place that the solution of continuity in question most frequently manifests itself.' The reason is, he thinks, the difficulty which the blood encounters, in this place, in its return against gravity, unassisted by valves. The stasis of the venous blood becomes an irritant, and induces an inflammatory condition, which causes and keeps up the ulceration. The success which attends ligature of the saphena vein, in ulcers of the leg, irremediable by other means, is, he observes, an incontrovertible proof of the truth of his theory. The means employed by the partizans of atony and debility, furnish auxiliary proofs—as the horizontal posture, quietude, compression.

"These ulcers are much more frequently situated on the left than on the right leg. How is this to be accounted for? The partizans of atony said it was because the left leg is naturally weaker than the right. But, of a number of ambidexters, or rather of left-footed patients, and consequently where the balance of strength was on the left side, it was still found that ulcers were infinitely more frequent on the left leg than on the right. Mr. Lisfranc accounts for the circumstance by the pressure of the sigmoid flexure of the colon, (so often distended with indurated fæces,) on the external iliac vein of that side. It is for the same reason that sarcoceles, cirsoceles, and hydroceles are more frequent in the left than in the right testicle, or side of the scrotum, the pressure of the sigmoid flexure acting on the spermatic cord, and retarding the return of blood.

"Mr. Lisfranc has some peculiar notions respecting the nature of these ulcerations of the legs. He considers them a kind of gangrenous affection, (une affection gangreneuse, *sui generis*.) We humbly conceive that this is but a very slight improvement on John Hunter's term—'ulcerative inflammation.' Be this as it may, we all know the difficulty of healing old-established ulcers on the lower extremities, and the various means that have been tried in this and other countries for expediting such process. Mr. Lisfranc alludes to the real or supposed danger of closing drains of this kind long established. Many of the best observers in medicine and surgery have testified to the diseases which have supervened on such cures, especially to cerebral and pulmonary congestions; and consequently have recommended the opening of issues or other drains to prevent these accidents. Mr. Lisfranc believes that the danger arises from a bad condition of some of the viscera at the time the ulcer is healed, rather than from any disease which could result from the simple incarnation and cicatrization of a discharging sore. With this view, he accurately examines his patients, and when he finds any visceral disorder, he first endeavours to put that out of the way, by the proper remedies, and by proper diet. He next corrects the bad state of the ulcer itself, by reducing inflammation and irritation, through the medium of rest, leeches, poultices, and other proper applications. When the sore is thus brought to a condition of being healed, he applies bundles of charpie wetted with solution of chloruret of lime or of soda, and keeps the sore soaked with such solution, graduated in strength to the sensibility or irritability of the parts. By this application he avers, and appeals to the wards of La Pitié for proofs, that he heals these old ulcers in a very short time, varying from five to eighteen or twenty days.

"But when the ulcer is based on a lardaceous or disorganized substratum, this will not succeed. Mr. Lisfranc then tries ablations, by slices, of the disorganized tissue; or, more frequently he makes various incisions, crucial and perpendicular, into the parts. If these do not succeed, ablation of the whole is effected, by the knife or by the cautery, according to the extent and depth of the morbid structure. The actual cautery, in some obstinate cases, is substituted by Mr. Lisfranc, for the potential. When the ulcer is thus brought to a tenable condition, the chloruret is applied, and cicatrization soon follows.

"Those who frequent La Pitié are surprised at the astonishing rapidity with which this able [illegible]geon heals burns and scalds in this way. Forty-eight hours are often sufficient for healing of burns of the first or second degree of intensity. Ulcers healed in this way are said to be infinitely less liable to break out again, than those treated in the common manner. He properly advises the laced stocking or other support, however, after the cure thus performed. And, in cases where there is any tendency to visceral or cerebral disorder, he establishes one or more issues on the upper or lower extremities.

"The chlorurets will not be successful where the ulcer is connected with, or dependent on a varicose state of the veins of the limb. The ligature and section of the saphena vein have been often practised in England and in France; but dreadful accidents have too generally ensued. The sides of the vessel are usually so thickened that they will not collapse when cut; and if air gets in, a rapid and destructive phlebitis is established. Mr. Lisfranc therefore abandoned this practice, and cut out two or more inches of the dilated vessel, trusting to careful compression of the vein above and below the resection, rather than to the ligature. In this manner he has operated a great number of times in La Pitié, and no fatal accident has ever succeeded such practice. As success, in this operation, depends on the formation of a coagulum in the saphena, it is necessary to select a spot for the operation, where there are no collateral communications. Mr. Lisfranc generally selects the inside of the knee, near the upper extremity of the tibia, for the resection, the branches of communication being all below the joint. If the saphena be varicose up as high as the knee, this state almost always coincides with a chronic inflammation of the sides of the vessel. In such case, Mr. Lisfranc performs the resection on a sound portion of the vessel, on the inside of the thigh, but as low down as possible.

"*Operation.*—The patient is placed horizontally, and if it is the internal saphena that is to be operated on, the limb is laid, a little bent, on the external side. An assistant compresses the vein, by grasping the limb tightly above the part. The surgeon then, with a bistoury, makes an incision along the vessel, going only through the skin. When the vein is laid bare and insulated, the surgeon introduces the point of the scissors under the vessel, close to each angle of the wound, and snips the vein across. A considerable quantity of blood is then suffered to escape, if the vessel will bleed, in order to prevent inflammation; and if hæmorrhage will not take place, the patient is bled from the arm. Light, but careful pressure is then made above and below the wound, which is healed, if possible, by the first intention. Much pressure ought not to be made on the wound itself, for fear of irritation and inflammation. The patient should be kept quiet, and the utmost attention paid to diet and regimen. In less than thirty hours, the ulcer changes its aspect, from red or violet to pale—the purulent secretion diminishes, and assumes a healthy appearance. Cicatrization sometimes follows, in five, ten, or fifteen days, but the medium term is from twenty-five to thirty.

"Phlebitis may occasionally succeed the operation. The saphena will become tense and painful, feeling like a cord under the finger. If not checked, the inflammation will run upwards, and death may be the consequence. Mr. Lisfranc, in such cases, abandons the inflammation of the saphena below the wound to itself, and covers the track of the vessel above the resection with leeches. When these fall off, a warm poultice with plenty of laudanum is applied. Since he trusted entirely to bleeding and poulticing *above* the wound, he has never lost a single patient. We shall close this paper with a case in illustration.

"*Case.*—Tellier, aged forty years, entered La Pitié on the 10th of November, having on the inside of the left leg a varicose ulcer, the size of a man's hand. This ulcer had continued for several years, and was accompanied by a multiplicity of varicose veins, and very callous edges. It had resisted all kinds of treatment, and therefore the operation was performed on the tenth of the same month, in the manner already described, an inch and a half of the vessel being removed. The upper extremity of the vein furnished a considerable quantity of blood, and slight compression was employed. 16th. The ulcer is pale—there is no pain—and the patient appears in a good state. 17th. The upper portion of the vein is painful and hard. Twenty-five leeches were applied, followed by cataplasms, with laudanum. 18th. No amelioration of the phlebitis. Twenty-five leeches again applied. 20th. Some traces of the phlebitis still remained, and another batch of twenty-five leeches were put on the track of the vessel, the cataplasms and anodynes being continued. 21st. The inflammation has completely disappeared. The poultices were still persevered with. The ulcer is red, the suppuration good, cicatrization is commencing. 25th. The patient was so well that food was given him. He was discharged cured on the 27th January.—*Revue Med. Decembre,* 1826.

"As a proof of the great success which attends Mr. Lisfranc's treatment of ulcers by means of the chloruret of lime, and resection of varicose veins, it is stated that La Pitié usually contained about fifty of these cases constantly within its wards; whereas there are now very few seen there, so speedily are they cured and discharged."—*Med. Chir. Rev. April,* 1827.

48. *Cancer of the Penis.*—"Mr. Lisfranc was often surprised, on amputating the penis, to find that the disease had not extended nearly so far as it appeared to do previously to the operation; and consequently he was led to the idea of making, in future, a kind of exploratory operation, before he ventured to remove the organ in toto. This exploration consists in making, on the dorsal face of the penis, an incision, parallel with the *axis* of this organ, commencing at the anterior part of the carcinomatous portion, and carried backwards to its posterior. The knife should be directed slowly along the parts, cutting by light strokes through the degenerated mass. By carefully sponging, the surgeon will thus come

down, (as if cutting on a hernial sac,) to the fibrous envelope of the corpus cavernosum penis. If this be found sound, a careful dissection of the diseased parts may be effected, and the necessity of amputation avoided. If, on the contrary, the disease is ascertained to have spread its roots too deeply, the organ must be sacrificed. Mr. Lisfranc thinks that the addition of pain which this exploration occasions should not be put in competition with the chance thus afforded of preserving the organ. We shall now proceed to the statement of two cases in illustration.

"Case I. John Roussel, 27 years of age, was admitted into La Pitié, on the 6th of June, 1826. Some months previously he had had a paraphymosis succeeding a gonorrhœa, and which required an operation to set it free. The part had continued painful ever since, notwithstanding the use of antiphlogistic and antisyphilitic medicines. The pain afterwards became lancinating and insupportable. When received into hospital, the prepuce was observed to be retracted behind the gland, forming a dense, red ring, the thickness of a person's thumb, and apparently making part with the body of the penis. There were two points in a state of ulceration, discharging a thin fetid pus. The pain was very distressing, the pulse hard and quick. Twelve ounces of blood were taken from the arm—emollient poultices were applied—and the patient put upon low diet. These means were continued till the 10th, when an operation was practised. Every thing was prepared for amputation of the penis, in case the malady was found to amalgamate with the corpus cavernosum. A longitudinal incision was made, in the manner before mentioned, from the posterior to the anterior portion of the tumour, penetrating slowly down to the fibrous envelope of the corpus cavernosum, carefully sponging away the blood as they proceeded. It was clearly ascertained that the said fibrous envelope was sound. It was therefore determined to dissect away the whole of the disease, which was no easy operation. The patient was intractable, and it was necessary to be careful in removing the whole of the disorganized mass, without injuring the body of the penis. Opposite to the two ulcerated points it was found that the fibrous envelope was partially diseased. The diseased portion was removed, and the whole mass finally dissected away, without injuring the urethra. Some vessels were next secured, and the operation completed. Simple dressings were applied, and the patient carried to his bed. Considerable inflammation and sympathetic fever followed, and were met by blood-letting, antiphlogistics, and poultices. On the 13th, suppuration commenced, and the symptoms were mitigated. Every thing went on favourably; but as it was feared that there was a syphilitic taint in the constitution, the proper remedies to correct this were administered. In order to effect a good cicatrization, the dressings were carefully attended to, and the chloruret of soda was used, in weak solution. By the end of July, the wound was completely healed. The patient has since been seen, and was found perfectly well.

"Case II. J. Chevalier, aged forty-six years, entered La Pitié, on the 25th July, 1826, for an old standing cancer of the penis, occupying the whole of the anterior part of the scrotum, the skin covering the pubes, and half of the penis. The right testicle was indurated and enlarged, and the spermatic cord in the same state. The disease had continued long; but the man was so deaf, that little information could be obtained as to the exact history of the case. The patient experienced almost constant lancinating pains, and ulceration prevailed far and wide over the diseased parts. The ulcers had raised and everted edges, with foul yellow sloughs at bottom. The pulse was hard and quick; but the appetite had not failed. He was bled from the arm—his diet reduced—and diluent drinks ordered. The ulcers were poulticed. These means were continued till the 5th of August, when the following operation was performed.

"A semi-elliptic incision was made, beginning at the crural arch of the right side, an inch from the spine of the os pubis, and ending at the lower part of the scrotum; then carried upwards to the summit of the left testicle. Another incision, commencing from the same origin as the former, descended, and swept round to meet the other incision, in a manner which cannot well be described in words. Mr. Lisfranc then dissected away the diseased parts with great care, not to wound the spermatic cord or the testicle. Considerable hæmorrhage occurred during the operation, which was exceedingly difficult. In order to remove the cancerous disease of the penis and integuments over the pubes, incisions and dissections were carefully and adroitly made by Mr. Lisfranc. On the penis itself, a longitudinal incision was made through the diseased parts, to ascertain how far the roots of the cancer spread. They were found, in some places, to penetrate the fibrous envelop of the corpus cavernosum, and these points were removed either by excision or scraping with the edge of the scalpel. The operation was necessarily tedious and excessively difficult; but was at length brought to a conclusion, and dressings applied. Strong fever rose after this terrible operation; and next day it was thought proper to remove the dressings. The wound was considered to be in a good condition; 'mais cette enorme denudation était affreuse à la vue.' The patient was bled, and kept very low. On the 7th, the fever was abated; but pain was great, and the wound was red and tumid. Forty leeches were applied to the abdomen and around the wound. Emollient poultices were applied. The penis was greatly swelled; but the swelling was œdematous. By the 11th, suppuration was established, and the wound beginning to clean. Some nourishment was allowed. On the 14th, the dressings were wetted with the solution of chloruret of soda. By the middle of September, the whole surface was healed, and Mr. Lisfranc presented the patient to the Royal Academy of Medicine, the members of which verified the completion of the cure.

"We think Mr. Lisfranc deserves a civic crown for thus preserving the life of a fellow creature, who, but for this most arduous operation, was doomed to a lingering and torturous death."—*Med. Chir. Rev. April*, 1827.

49. *Bronchotomy in Croup.*—The operation of bronchotomy, in croup, has been followed by results, as far as we have been able to ascertain, far from encouraging. Is this owing to the operation not being performed at the proper period of the disease? or is the operation wholly useless? These are questions of deep interest to the profession, and the following reflections on the subject, by Mr. Porter, are worthy of attentive consideration. "The effusion of coagulated lymph is very generally confined to the larynx alone: but still in a number of cases the inflammation commences in the bronchial cells, and proceeds upwards in the windpipe. This is an affection in which an operation could not possibly be of service, and there is no mode of distinguishing accurately as to what has been the original seat of the disease. This one consideration must involve every case in obscurity; and render the success of an operation a matter more dependent on chance than on judgment. Again, if it be true that inflammation interferes with the functions of the bronchial membrane, and that the blood will be imperfectly arterialised when such disease is present, it will be of little consequence whether air be ad-

mitted or not; the brain will as surely be affected as if no artificial opening had ever been practised, and all the relief the patient will experience can amount to no more than a cessation of that extreme muscular exertion which is necessary to carry on respiration at all. I saw this admirably exemplified in the case of a little girl on whom bronchotomy was performed for the cure of croup: the disease had originally been confined to the larynx, but after the operation, the bronchial cells became affected, and the inflammation spread upwards nearly to the place in which the trachea had been opened. In this instance there was no deficiency of air: the aperture was much larger than the natural size of the rima glottidis, yet the patient had convulsions, exhibited every symptom of cerebral congestion, and finally died comatose.

"In a disease that runs its course with such rapidity, it would be desirable to ascertain at what period the operation should be performed, and what are the symptoms that indicate its necessity. In the earlier stages, when the membrane is red and swollen, and no lymph is yet effused, there can be no object in making an incision, which will be much more likely to aggravate the disease than to relieve it. When the adventitious membrane has been formed, there is some reason to think that in the great majority of cases sufficient mischief has been already accomplished to render a recovery very problematic. The lungs have been already loaded with blood: perhaps effusion has been begun, and it may be, from the irritation it has undergone, that the mucous membrane of the bronchial cells has already taken on a disposition to inflammation. It may be that the brain has already become affected, for I have met with many instances in which the disease proceeded with such rapidity that no lymph has been effused, and yet the patients never during life showed any symptom that could mark a difference between the two cases. At the latter stages of croup, it would be absurd to think that an operation could possibly prove beneficial, unless it is supposed that a wound of the wind-pipe could remove cerebral congestion; and therefore whenever convulsions have occurred, or that the patient appears comatose or sinking, let no man undertake it as a last resource, for it is a resource that will avail him little."—*Observations on the Surgical Pathology of the Larynx and Trachea, &c.*

50. *Tapping the Pericardium.*—In the April No. of our esteemed cotemporary the Medico-Chirurgical Review, an interesting case of pericarditis is related in which the above operation was performed by Jowett, of Nottingham. The pericardium was tapped in the following manner. "Having made a small incision with a lancet through the integuments, between the fifth and sixth cartilages, exactly half way between the sternal extremity of the sixth rib, and the middle of the ensiform cartilage, I thrust a trocar, which had its canula guarded, so that it could not penetrate further than one inch, directly through the thoracic parietes; as I withdrew the trocar, two or three drops of serum escaped, and before I could adapt the pipe of the syringe apparatus to the canula, a little air was sucked through it, during the act of inspiration. On attempting to work the syringe, no fluid was abstracted; imagining, therefore, that I had not punctured the bag, I again introduced the trocar, but with no better success. Certain of the correctness of my diagnosis, I then determined, with Dr. Manson's concurrence, to make another attempt higher up, where there could be no possibility of missing the pericardium, and I accordingly repeated the same process between the fourth and fifth cartilages, as near the sternum as there was space enough for the instrument to pass.

Here the trocar seemed to push something before it, which it did not appear to penetrate, and although, here likewise, I twice introduced the instrument, still no fluid could be sucked out by the syringe."

For eight succeeding days, the improvement in the patient was such as to warrant great expectations of ultimate success; but on the tenth day after the operation, the patient died.

On examination, "the exact situations of the punctures were found to be as before described. The *diaphragm* was drawn very high up into the thorax, so that if a pointed instrument had then been introduced perpendicularly at the place of the lowest operation, it would have been punctured. The *pericardium* adhered externally to the anterior part of the left thoracic parietes, through the medium of a layer of firmish recent lymph; and internally it was found every where adherent to the surface of the heart and large vessels, by means of a similar layer of lymph, which varied much in quantity in different places, being in some parts from one-eighth to one-fourth of an inch thick. The adhesion was moderately firm, and the lymph of a reddish colour. As the cavity of the pericardium was destroyed by this state of things, there was of course no fluid remaining in it. The pericardium proved to have been perforated at both the points of operation, and there were two holes at each place, so that every time the trocar was introduced, it had penetrated the bag. On the surface of the right ventricle, opposite the upper or last made puncture, there were two dark spots, which, on examination, proved to be drops of coagulated blood enveloped in the layers of lymph, and which had doubtless come from the wounds of the pericardium, as the surface of the heart was untouched. Both the ventricles and auricles were of the natural size. The muscular structure of the heart was rather flabby, and paler than natural. The edge of the mitral valve, on its auricular surface, was beset with a small ridge of semi-cartilaginous lymph, evidently of recent deposition, although firm and hard.

"To this long account I may add, that I have since tried the experiment of puncturing the free portion of the pericardium on the dead body, and I have found, that the point of the trocar readily penetrates the sac; but as soon as the edge of the canula, (which of course is always rather larger than the instrument it contains,) comes in contact with it, it pushes the pericardium before it, and does not enter it, unless it be introduced to a considerable depth. This explains the supposed failure of the operation in the first instance.

"I conclude by observing, that the following propositions appear to me fair practical deductions from the case:—

"1st, That the operation of tapping the pericardium may be performed without injuring the heart, or endangering the life of the patient.

"2nd, That the operation affords a probable chance of saving life, when all other means have failed.

"3rd, That it is proper and justifiable under urgent circumstances.

51. *Extirpation of the Parotid Gland.*—This operation has been performed by Mr. Lisfranc, the distinguished surgeon of La Pitié.

"J. Prevost, aged sixty years, was received into hospital on the 1st of June, 1826, on account of a fibrous tumour, the size of a man's fist, occupying the region of the parotid gland, and extending beyond that in several directions. Although the tumour was moveable in some directions, it was fixed in others, showing that its roots penetrated deep, and were adherent to the neighbouring bones. After a few days of proper regimen, the operation was performed, in La Pitié, on the 5th of June.

We need not detail the steps of the operation with any degree of minuteness, since the same process will rarely be applicable to two cases. After elliptical incisions had been made, so as to embrace the tumour, and some dissection had been gone into around it, during which several vessels were divided, it was attempted to insulate the disease by the fingers and by the handle of the scalpel; but this was found to be quite impracticable, on account of the number and strength of the ligamentous attachments to the surrounding parts. The surgeon was therefore obliged to have recourse to the knife. A tedious, painful, difficult, and dangerous dissection ensued, but was ultimately crowned with complete success, in the removal of the whole of the diseased parts, including the parotid gland. Some of the attachments went to the transverse processes of the first two cervical vertebræ, and to the stylomastoid process. The carotid artery was completely insulated for some space, and no sign of pulsation could be seen or felt, unless the artery was compressed between the fingers, when the rush of blood through the vessel, at each systole of the heart, communicated the sensation to which the term pulse has been applied. One attachment of the tumour was to the condyle of the lower jaw, and others insinuated themselves between the pterygoid muscles. These were all carefully separated; and in this part of the dissection, a large and powerful column of blood sprang to the height of several feet from the bottom of the wound! It was overcome by pressure. The operation was continued amidst appalling hæmorrhage, by which the patient was, for a time, deprived of sense. After he had revived a little, Mr. Lisfranc kept pressure on the internal maxillary artery, which was divided, while he proceeded to tie, seriatim, the temporal, transverse facial, auricular, and mastoid arteries. The internal maxillary, (ou la terminaison de la carotide externe,) remained to be secured. With equal difficulty and dexterity, this intrepid surgeon seized and tied this great vessel, amidst deluges of blood; and the operation was finished. The wound was dressed, and the patient put to bed. We need not follow the diurnal reports of the case afterwards. The patient went on remarkably well till the 27th of the same month, the wound gradually filling up. At this time, whether from some dietetic error or other cause, erysipelas of the face took place, attended with vomiting and diarrhœa. Amongst matters thrown up were some preserved cherries. Fever now became developed, and there were evident symptoms of abdominal inflammation. This last was conquered by numerous leeches—the suppuration went on kindly—and the wound was healing fast. On the 2d July, a relapse took place, and some blood appeared in the stools. After various vacillations, during which the erysipelas appeared and disappeared several times, a colliquative diarrhœa came on, and could not be suppressed. He was carried off by this complaint on the 16th July, six weeks after the operation.

On dissection, the mucous membrane was found inflamed throughout its whole extent, and several large ulcerations were discovered, some of which had penetrated through the muscular and peritoneal coats, and caused extravasation of the intestinal matters into the general cavity of the abdomen. This, of course, was the cause of death. The preparation of the extirpated tumour, including the whole of the parotid gland, was presented to the Academy of Surgery, and there examined by numerous members, who verified the statement of the extirpation. The examination of the part where the operation had been performed, corroborated also the truth of the details already given. It is evident that, as far as the operation was concerned, the surgeon was successful. If he could not control the gastro-enteritic inflammation and ulceration that supervened, there was no blame attached to the surgery of the case."—*Med. Chir. Rev. April,* 1827, *from Revue Médicale, Dec.* 1826.

52. *Strangulated Inguinal Hernia, cured by the introduction of a medicated bougie into the urethra.*—It was mentioned some time since in several of the French journals, that the introduction into the urethra of a bougie, smeared with equal parts of extract of stramonium and Beaume's extract of opium, had been found exceedingly useful in strangulated hernia; it has recently been tried in Italy with success. A man aged fifty-two, who had an inguinal hernia of nine years' standing, was attacked November 17, 1826, in consequence of some irregularity in his diet, with nausea, pain, and the usual symptoms of strangulated hernia. He in vain attempted to reduce the tumour, and the efforts of a surgeon to whom he applied on the subsequent day, were equally unsuccessful. On the 20th November he was taken to the grand hospital of "St. Jean Baptiste," of Turin. Several means were there used without benefit, and it was resolved to operate, when Mr. Riberi, not to omit any means, introduced into the urethra as far as the bladder, a bougie medicated in the way above noticed. Ten minutes after its introduction, the pulse became so small as scarcely to be felt, the surface pale, the skin corrugated, as also that covering the hernial tumour, and the size of the tumour diminished a little in volume. Taking advantage of this debility, Mr. Riberi attempted the reduction of the hernia, and succeeded in the space of a minute.—*Repertorio di Med. Torino, Dec.* 1826.

53. Civiale's *Lithontriptic process.*—Mr. Civiale informs us in a small work[*] recently published, that he has operated upon forty-three calculous patients, all of whom with one single exception, were cured. Those who died some time subsequent to the completion of the process, succumbed to causes foreign to the operation, and in the greater number of these, he has proved by dissection, that the bladder was healthy and did not contain any fragment of calculus.

54. *Seton in Preternatural Joints, Spina Ventosa, &c.*—In the Edinburgh Med. and Surg. Journ. for April, 1827, there is a notice of an interesting essay[†] by Dr. C. A. Weinhold, professor of clinical surgery at the University of Halle, on the treatment of preternatural joint, spina ventosa, and overgrowth of the callus of fractures, by the seton. "The cases in which that distinguished surgeon has used it, are six in number, four of artificial joint, of which three were of the femoris, one of spina ventosa, and one of preternatural growth of callus, subsequent to a mismanaged fracture. In all of them he was successful, except in one of the cases of preternatural joint; in this the joint was in the neck of the thigh bone, and matter had collected in the capsule before the operation. The peculiarities of his operation consist in the use of a drill of his own inventing, by which the seton is drawn right through the joint or callus, and in the employment of a conical or cuneiform seton, by which greater irritation is maintained than by the ordinary seton, while the entrance of air by the external wound is always prevented to a certainty."

Professor Physic to whom mankind are indebted for this valuable improvement in the treatment of preternatural joint, has informed us within a few days that he has used it in cases of deficient bony union after fractures of the inferior maxilla, humerus, ulna and radius, and tibia, and with, he believes, uniform success. He has likewise tried it in three cases of artificial joint in the femur, but without satisfactory results. In two of these cases, however, this may be accounted for, from its being found impossible to place the fractured extremities *nearly* together, and the third left the city, and did not continue the use of the seton for a sufficient length of time.

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[*] De la Lithotritie, ou Broiement de la Pierre dans la Vessie; par le Dr. Civiale, in 8vo. avec 5 planches. Paris, 1826.

[†] Published in the "*Journal der Pratischen Heilkunde,*" for May, 1826.

Dr. Physic performs the operation with a very long seton needle armed with a silk ribbon or French tape; he passes this needle *through the integuments*, and between the ends of the bone—he considers this mode preferable to cutting down to the bone with a scalpel as has been done by some surgeons. The seton is left in the wound for four or five months, or longer if necessary.

MIDWIFERY.

55. *Amputation of the Neck of the Uterus.*—The patient upon whom Mr. Lisfranc performed this operation, which was noticed in our last No. p. 169, is reported to have become pregnant a fortnight after the operation, and has been delivered at the full period. The labour did not last more than an hour. Her former labours had been very difficult.

56. *Case of Delivery by the Cæsarian Section, reported by* Dr. Seidler.—This operation was performed upon a woman pregnant for the first time, the antero posterior diameter of whose superior strait was only two inches and a half, it was followed by death on the third day. The fatal termination is attributed, by Dr. Seidler, to the operation not having been performed until the fifth day after the commencement of labour, when the powers of the mother were exhausted; this exhaustion prevented the emptied uterus from contracting, seasonably, and thence resulted sanguineous effusion into the abdomen, a general over-excitement, an inflammation of the uterus and the neighbouring parts of the intestinal canal.—*Ferussac's Bulletin.*

The late employment of the operation in the above case, will, with great probability, account for the death of the patient, and adds to the general conviction, that the delay so common in Great Britain in similar cases, is the reason that this mode of delivery has so seldom been attended with success.

57. *On the necessity of perforating the Cranium, and on the danger of substituting delivery by the forceps for it. By Professor* W. J. Schmitt, *of Vienna.—(Heidelb. Klin. Annal. Tom. I.)*—The object of this memoir is to prove that the perforation of the cranium is an indispensable operation in certain cases of accouchement, and not susceptible when indicated of being superseded by the application of the forceps. When we apply the forceps in cases which seem to require perforation, it can be but with the hope of saving the child, which we abandon when we perforate the cranium. But this hope is chimerical, because the life of the fœtus is almost always incompatible with the degree of compression necessary to compress its head to that size which will enable it to pass through the pelvis; moreover the accoucheur ought not to neglect the mother, whose life is endangered by the violent efforts with the forceps. These efforts

occasion serious contusions in the parts concerned, by the excessive pressure exercised upon them by the head, and these lesions are so much the more to be feared, as the powers of the mother are most frequently exhausted by the length of the labour.

In the case of relative contraction of the pelvis, it is without doubt allowable to the accoucheur to try the application of the forceps, but not to endanger by his efforts, the life of the mother. In absolute contraction, the forceps ought never to be employed, as we cannot reasonably hope any happy result.—*Ferussac's Bulletin.*

We entirely coincide with Professor Schmitt, in the impropriety of using the forceps in such cases; indeed, would say they should not be thought of, but we cannot agree entirely with him, that the only proper alternative is in embryuncia—the Cæsarian operation in some cases certainly merits the preference.

MEDICAL JURISPRUDENCE.

58. *Two cases of Poisoning by Belladonna.* By Mr. Smith, Surgeon, of Forres, N. B.—"Nov. 5.—At five P. M. I was called to see two of Mr. M.'s children, both boys, the one four, and the other two years of age. They had eaten, together with another child, of the berries of the Atropa Belladonna, from a bush in Mr. M.'s garden, to which they got access through a gap in the railing. It appears to have been between one and two o'clock that they were in the garden; for soon after two the elder M. went to school, where the symptoms to be detailed made their appearance. When taken up to his lesson, he did not speak, but laughed immoderately, and grasped at imaginary objects: he had, previous to this, complained of pain in his head. He was now sent home, where the laughing continued, and he was as talkative as he had before been silent, but he was altogether incoherent, added to this, he was in constant motion, running round and round the room. This wild conduct attracted the particular attention of his mother, who, observing a red stain on his face, suspected what had taken place. I found him laughing and talking alternately; he was now kept on the knee, but the extremities were in violent and almost constant action; the eyes fixed, and the pupil fully dilated, and insensible to the light of a candle. A scruple of Sulph. Zinc. was immediately procured, and given at twice in the course of a few minutes; and as soon as he began to vomit, the fauces and gullet were freely tickled with a feather. By these means a good deal of reddish matter in which were many pieces of the berries, was brought up.

"It was at this time that our attention, (Mr. Adams, my partner, had arrived,) was called to the younger boy. In him the symptoms were the same, and now fully as violent. About half a scruple of sulphate of zinc was given to him, and the fauces and gullet treated in the same way. This caused him to vomit great quantities of porridge, (which he had taken for dinner,) and one or two husks of the berries. To induce still more vomiting, a solution of tart. emetic was given to each. To effect this, and the giving of the other medicines, &c. as the jaws were firmly locked, it was necessary to separate them, and keep them so by the handle of a penknife. Besides the locking of the jaws, there was difficulty in swallowing, for but a very little milk was got down, although frequently administered. The titilation was continued at intervals, until both had evacuated a good deal of reddish looking matters: the colour being evidently caused by the juice of the berries. After some little time, when nothing more was coming up, about an ounce of castor oil was administered to each. Notwithstanding this treatment, the symptoms had in the mean time become worse. The muscular motions were stronger and incessant; breathing noisy, and with a croupy sound, and occasional cough; faces swollen and red; incoherent talking continuing. Soon after taking the oil, enemas were administered, and repeated about every two hours. They had also small quantities of vinegar and water, (half and half,) given them frequently. It was now six o'clock. The elder boy's breathing was loud and stertorous, and the face much swollen; but the muscular motions were less violent and frequent; the skin cold; pulse barely perceptible from the beginning, now not felt in the radial artery: he was therefore put into a warm bath, and after a few minutes, while there, the jugular vein was opened, and some five or six ounces of blood taken away. This relieved him considerably. He was put into a blanket, and kept warm. There was now a disposition in both to sleep in the intervals of the muscular movements, which returned after short intervals of quiet; but it was not till towards the morning of the 6th, that we permitted them to take short sleeps. While not asleep, they were still incoherent. While awake, they had some strong coffee given them, or occasionally the vinegar and water.

"6th.—About three o'clock this morning, more castor oil was ordered, but little got down. At nine, the elder boy had much croupy cough, which has caused, oftener than once, a little bleeding from the neck; locking of jaws less in both; other symptoms much the same. Coffee and enemas to be continued, and four grains of calomel given to each. Shortly after this, the infant voided by stool about twenty skins of the berries, and, in the course of the forenoon, he had several feculent stools.

"At two P. M. I found this poor little fellow cold, and deadly pale, with hardly any pulse. He was immediately put into a warm bath, and the chest rubbed with flour of mustard; an assafœtida enema was also thrown up. He gradually became warm, and the pulse more distinct. He was again in a state of collapse at six; when the same means were used, and he took small quantities of warm punch and chicken-broth. When taken from the water, he was wrapped in blankets, laid at the fire-side, and bottles with hot water placed round him. At half past seven, he was much revived, and asked for a drink; he also ate a spoonful or two of panado; preferred cold water for drink; still purged; stools watery. Some erithema, which was on him in the morning, has now disappeared.

"At half past four, the elder boy got another ounce of castor oil; he has been in a natural sleep for some time; has still slight convulsive motions; pulse very frequent, but distinct. Allowed plenty of tea, broth, or any liquid he likes; and to have a soap enema when he awakes.

"7th.—Were both restless in the early part of the night, but have slept a good deal since morning; towards which, they began to distinguish objects, and to speak and act rationally. Previous to this they were blind, for the candle held close to the eye produced no effect on it, nor any appearance of their being aware of its presence. Pupils are still much dilated, and conjunctivæ red, although less so than they were. Pulses distinct, and in the eldest boy soft, and not very frequent. Freely purged, the infant complaining of some pain in the belly, which is not increased by pressure. Thirst great in both. The broth, &c. to be continued, and another enema administered to the elder.

"From this time they continued to mend, and after a little time they had no complaint. The noisy croupy cough continued longest; and, when the elder boy has a cold, the cough is still, (at a distance of six years,) of the same nature.

"The boy mentioned as having partaken with the M.'s of the poison, was treated nearly in the same way by another practitioner, and with a like result."—*Lond. Med. and Phys. Journ. April*, 1827.

59. *Case of Poisoning by Sulphuric Acid.*—"In the month of October last, a girl, twenty years of age, of a dark complexion, robust, and of a violent temper, attempted to swallow three ounces of the sulphuric acid of commerce; the pain it caused prevented more than two or three spoonsful reaching the stomach. Vomitings and convulsions succeeded; and her loud cries attracted the neighbours, who tried to give her cold water, but were unable to do so in consequence of the opposition to deglutition arising from spasmodic constriction of the pharynx. In the evening she was seen by a physician, who prescribed mucilaginous drinks, and a large quantity of milk; eight leeches were applied to the left side of the neck, and emollient fomentations to the epigastrium. The leeches produced no relief; the fomentations could not be borne; and it was with great difficulty and with excessive suffering, that a few spoonsful of the prescribed drinks were swallowed. Notwithstanding these circumstances, the agitation and suffering of the patient became less on the following days, and on the fourth day after the accident she was seen by Dr. LEBIDOIS, fils, by whom the case is reported.

"She was lying on her back when he was called in to see her; the trunk and lower extremities constantly motionless; the face pale, sunk, and with an uneasy expression; the lips closed, and disfigured by round brownish eschars; the tongue was soft, moist, and white, as well as the palatine arch; the fauces and pharynx of the deepest red colour, without eschars. A deep-seated and agonizing pain was felt along the whole neck and chest, from the throat to the stomach; it was increased by pressure, but still more by deglutition, by cough, or expectoration, by talking, and even by sudden turning of the head. The sensibility of the epigastrium was so great that the application of the hand, or even the weight of a single coverlet, could not be endured, nor the fomentations. She continually threw the clothes off the stomach, as if for the purpose of coolness, and scratched it gently, as if she felt some pruritus there. When the mildest kind of fluid was conveyed into the stomach, nausea was excited, as well as pain, the consequence of which was an increased repugnance to all kind of drink. The abdomen was soft, and without heat; the pulse small, feeble, regular, not frequent; the respiration slow, tranquil, and wholly thoracic; voice very low, *souflée;* and there was great unwillingness to speak; the skin was soft, cool, and not particularly dry; the extremities were cold; sleep not profound or frequent; intellectual powers undisturbed.

"On the succeeding days the depression and taciturnity were less; some spoonsful of broth were swallowed and retained. On the ninth day the eschars on the lips had disappeared, and the little wounds left by them had cicatrised: the pains in the throat, neck, and epigastrium, were less, but broth could only yet be taken in the smallest quantities: emaciation and weakness rapidly increased. She was in this state, and without any febrile symptoms, when a most fatiguing cough began to deprive her of sleep, and greatly increased her exhaustion. She died fifteen days after the poisoning.

"*Examination of the Body twenty-seven hours after death.*—There was slight redness of the fauces, the pharynx, and the upper part of the larynx. The œsophagus was so softened that it was torn in the attempts to detach it; its inner surface, from the guttural to the cardiac orifice, was of a cherry redness, near the latter there were irregular whitish bands, evidently marking the formation of cicatrices. The inner surface of the stomach presented various alterations: along the great curvature, from the pylorus to the cardia, it was sprinkled with large patches of a deep red colour, covered with mucus of the colour of wine: in many places its epidermis was lost, and it was covered with great patches of a deep red colour, and appeared to be in a state of suppuration: in other places there were whitish and tense bands, directed in different ways, indicating cicatrices already formed. Near the pyloris there was a grayish membranous layer, resembling that which is formed on old blisters, covering a considerable extent of the mucous membrane—the membrane itself, underneath, being intensely red. The small intestines were purple, contracted, and filled with bile and mucus mixed, the consistence increasing towards the cæcum. The large intestine was quite empty, and so contracted as not to be larger than the œsophagus. The heart was firm, about twice as large as the fist of the subject: the parietes, particularly those of the left side, thick and firm. The lungs were dense, reddish, and much engorged in the posterior portion: the bronchial mucous membrane was of a vinous colour, and covered with an abundant puriform mucus. There was nothing remarkable in the other viscera."—*Lond. Med. Repos. and Rev. June,* 1827, *from the Archives Générales.*

CHEMISTRY.

60. *Acids discovered in Castor Oil.*—"Messrs. Bussy and Lecanu have obtained three new fatty acids from castor oil: one, which they call *ricinic acid,* is fusible at 72° Fahr. another, termed *elaiodic acid,* is fluid at several degrees below 32°; and the third they have denominated *margaritic acid;* this crystallizes in fine scales, and is not fusible below 264°. These acids are volatile, more or less soluble in alcohol, and perfectly insoluble in water: and they form salts of very distinct characters, with several bases, and especially with magnesia and oxide of lead.

"When castor oil is distilled in a retort in the common way, there are obtained a small quantity of gas, water, and acetic acid, a colourless crystallizable volatile oil, ricinic and elaiodic acids, which condense with the oil in the receiver, and a solid matter which remains in the retort. The quantities of acid and of the volatile oil are nearly equal, and form nearly a third of the oil employed; the solid matter constitutes nearly the remaining two-thirds.

"This is a very singular substance: it is of a yellowish-white colour, full of cavities, and somewhat resembling the crumb of new bread. It is insoluble in water, alcohol, æther, the volatile and fixed oils. It is dissolved by the alkalies, with which it forms a kind of soap. It is not decomposed at a high temperature, inflames when exposed to an ignited body, and burns very readily without melting. When, instead of distilling castor oil, it is treated with a solution of potash, or soda, it saponifies even more readily than olive oil, and there are formed ricinates, elaiodates, margaritates, and glycerin. No other product appears; the glycerin amounts to about a fifteenth part of the oil, the margaritic acid about one thousandth, and the remainder is constituted of the other acids. These salts are very soluble in water, and act like ordinary soaps;

the smallness of the quantity of margaric acid will account for its not being found in the product of the distillation."—*Philosophical Magazine, from Journ. de Pharm.* Feb. 1827.

61. *Memoir on Squills.* By Mr. Tilloy.—The author has found in the squill, a pungent, very volatile principle, gum, uncrystallizable sugar, oily matter, and an excessively acrid and bitter substance, in which resides all the properties of the squill, and to which should appertain the name of scillitine.—*Ferussac's Bulletin, from the Journal de Pharmacie, Dec.* 1826.

62. *Experiments upon the reciprocal action of Iodine, and of the Protochloruret of Mercury.* By Messrs. Planche and Soubeirain.—On triturating together the iodine and the protochloruret of mercury, at first dry and afterwards with water, the iodine decomposes the salt, and there is formed a deuto-chloruret of mercury, and an ioduret of mercury. If the iodine is in excess, there is produced a deuto-chloruret and a deuto-ioduret of mercury.—*Ibid.*

MISCELLANEOUS.

63. Swedenborg's *Doctrine of Craniology.*—The following observations which we have accidentally met with in an old volume of the *Goettingische Taschenkalender,* will be considered by some, as another confirmation of the truth of the saying, that "there is nothing *new* under the sun." Without supposing that Dr. Gall borrowed any of his notions from the source here indicated, it is interesting to observe how similar were the views entertained by the Swedish theologian on the influence exercised by the different parts of the brain upon the form of the human skull.

Captain F. Walden published at Copenhagen in 1806, a Biography of the celebrated Swedenborg,* along with some extracts from his writings. It is very remarkable, as is shown by this work, that the distinguished Swede, about fifty years previous to Dr. Gall's theory, should have entertained a very similar opinion. The following are the words of Swedenborg:—

"Every man that is born, has a disposition to all sorts of evil, which must be checked by education, and as far as possible, rooted out. This is first to be attempted by correction and punishment, then by good society and example, which lead to imitation, and at last good is secured upon a true and reasonable religious root. When these conditions are all observed, it is indicated by the beautiful skull of the individual. On the contrary, should the education be neglected, or no sudden misfortune nor opposition hinder the first outbreakings of evil or disorder, the evil afterwards becomes habit, and produces peculiar wishes both in design and practice, which causes the formation of a badly shaped skull. The cause of the difference of skulls in such cases, is this: the peculiar distinctives of man, will and understanding, have their seats in the brain, which is excited by the fleeting desires of the will, and the ideas of the intellect. Near the various spots where these irritations produce their effects, this or that part of the brain is called into a greater or less degree of activity, and forms along with itself, corresponding parts of the skull."

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* The title of this interesting work is "Assessor Svedenborg's Levnet, Adskillige Udtog af sammes Skrivter nogle blandede Tanker, tilligemed Svedensborg's System i kort udtog. Kiobenhaven, 1806.

AMERICAN INTELLIGENCE.

Note on a Case of Lithotomy. By **Abraham L. Cox, M. D.** of New York.—A child not quite six years old was placed under my care, which had been afflicted with stone in the bladder during four years. When the sound was introduced, it seemed to grate along the calculus, without making direct percussion upon it. His friends stated that he had suffered all the symptoms of the disease with exceeding severity. The rectum was prolapsed, and during the operation, was thrust out with great force to the extent of four or five inches.

The operation was performed on the 25th of May, in presence of Drs. Mott, Riley, and other medical friends. Some impediment to the introduction of the staff occurred at the very entrance of the bladder, and while the urine was discharging itself along the groove, some blood followed on its removal. As soon as the knife entered the bladder, it grated against calculi so distinctly, that I at once felt and remarked aloud, "there are two calculi." They could not be seized with the forceps, but with my finger they were felt to be adherent about the origin of the urethra so strongly as to require considerable force for their detachment. They were then easily extracted with the finger and extremity of the scoop.

On examination there appeared to have been a recent fracture of the largest, by which I was induced to suspect that the fragment remained in the bladder; but on a careful search none could be found. The only satisfactory explanation of the apparent fracture was afforded by the structure of the calculi.

There is a projecting portion at the extremity of the larger stone, which seems of recent formation, is of a dull orange colour externally, studded with small protuberances resembling those upon the skin of an orange, and discoloured with blood. This was the point of adhesion, and in all probability it occupied the commencement of the urethra in which it was formed—is the part against which the sound grated, the disturbance of which produced the slight discharge of blood on removing the sound, and impeded its introduction immediately before the operation.

The small calculus was a little larger than the portion deficient from the larger stone, having the same dull orange colour, and surface as that projection of the larger one supposed to have occupied the commencement of the urethra. This projection, as well as the external layer of the smaller calculus is evidently of a more recent formation, and of a substance different from the rest. On breaking away with a dull knife the yellow incrustations of the smaller calculus, the nucleus was found to be the real fragment, previously searched for in vain, their surfaces and lamellæ corresponding exactly. The calculi together weighed seventy-seven grains. Professor Griscom has them for the purpose of analysis.

The patient recovered in a few days, and has suffered no subsequent inconvenience. A patient upon whom I operated a few days before, nearly of the same age, and from whom I removed a large moriform calculus, also recovered with equal rapidity.

Ligature of the Arteria Iliaca Communis, at its origin.—We are happy to announce that Dr. Mott's operation, which we noticed in our last number, has been entirely successful—the patient has perfectly recovered. The tumour is gone, there is no pulsation in the femoral artery at the top of the thigh, nor any throbbing discernible in the epigastric of the side where the aneurism was seated.

It is gratifying to our national pride, that the only instances in which the bold expedient of tying the common iliac artery has been resorted to, has been by American surgeons. This operation was first performed about fifteen years ago, by Dr. Gibson, professor of surgery in the University of Pennsylvania, in the case of a man who was wounded by a ball from a musket which divided that artery. The patient lived fifteen days after the operation, but then succumbed. Professor Gibson published an account of this case in the third volume of the American Medical Recorder, and at the conclusion of his paper remarks, "From the result of this case I am fully persuaded, that the common iliac artery in *aneurism* and under *favourable* circumstances, may be tied, not only without endangering the circulation of the lower extremity, but nearly with as much facility and safety as the *external iliac itself;* and if an opportunity offer of performing the operation, I shall not hesitate to embrace it."

Dr. Mott has *done this*, and he has the gratification of feeling that he has saved the life of a fellow creature, added to his own deserved reputation, and advanced the character of American surgery.

Instruments for illuminating dark cavities. About twenty-one years ago Dr. Bozzini, of Francfort, invented an instrument for illuminating, in living bodies, dark cavities having external openings, by means of which the condition of these cavities might be examined. The Austrian government charged the medical faculty of Vienna conjointly with the Josephine Academy to examine this instrument, called by its inventor, "Conductor of Light." The report of these learned bodies was not favourable to the invention. The introduction into the external opening of the tube which transmitted the light, was found not to be exempt from pain, especially when the part was diseased; the illuminated surface was too circumscribed, not being at most more than an inch in diameter; again it did not exhibit the parts sufficiently distinctly. Finally, although the instrument was judged susceptible of improvement, the reporters believed that it could not be considered in any other light than as a toy.*

On the 11th of December, 1826, M. Segalas exhibited to the Royal Academy of Sciences of France, an instrument for illuminating the urethra and bladder, which he calls the "Speculum urethro-cystique." More recently, M. Bombolzini has devised a speculum "to explore the interior of the stomach, of the bladder, of the uterus, and finally of the large intestines."†

We have not seen any of these instruments, nor met with a particular description of them; we cannot, therefore, say whether they are formed on the same principle, nor how far they may be found useful in ascertaining the pathological state of dark cavities.

We have, however, received through the kindness of our friend professor Horner, an instrument invented by Dr. John D. Fisher, of Boston, for the same purposes as those above noticed. Dr. F. states in his letter to Dr. H. the construction of "an instrument involving the same principles as Segalas, was thought of by me three years ago, when a student of medicine. I then had under my charge a woman who had a disease of the neck of the uterus, and so great were her feelings of delicacy that I could not prevail upon her to suffer me to make an examination with a common speculum." Dr. Fisher has sent to Dr. Horner, drawings and descriptions of several instruments, and a rough model of his latest and most improved one, but he considers this as susceptible of still farther improvement, and he is now engaged in perfecting it. Believing that it will be interesting to our readers, we have had a drawing of it made, and subjoin a brief description.

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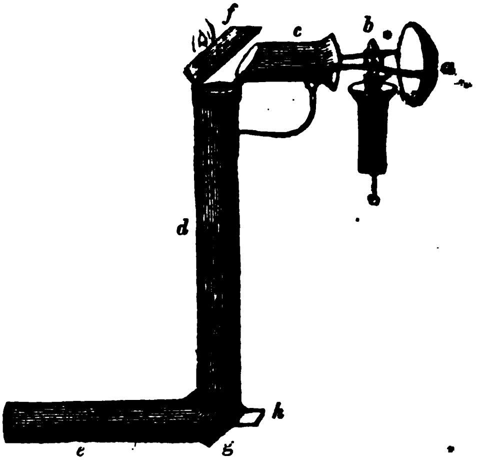
* Vide Bulletin de la Societe Medieale d'emulation, Avril 1806.

† Archives Generales, January 1827.



The instrument consists of a concave mirror, *a*, a light, *b*, three tubes, *c*, *d*, *e*, and two looking-glasses, *f* and *g*. The concave looking-glass *a*, is connected with the tube *c*, by two supports, as represented in the figure, from which is suspended a candlestick, with a hole in the bottom, through which a wire is introduced, for the purpose of elevating or lowering the candle, so that the flame may be opposite the centre of the lens. The tube *c*, is somewhat enlarged at its extremity towards the light; it is united to the tube *d* by a hinge, and is kept in its proper position by a bent wire which is attached to it, and fits into a sort of rack on the tube *d*. *d* and *e* are cylindrical tubes, united together at right angles, forming an elbow joint, the external angle of which is cut off, and the aperture closed by a looking-glass, *g*. *f* is a looking-glass, united to the tube *d* by a hinge; the amalgam is scraped off a small portion of this glass, or a hole may be made in it, as represented in the figure. In the tube *c* a double convex lens is placed to concentrate the light on the looking-glass *f*, and a similar lens is contained in the tube *e*, to magnify the object to be viewed. This latter lens is fixed in a ring, to the sides of which is attached the wire *h*, and by means of which it may be moved so that the object may be in its focus.

It is scarcely necessary to add that the tube *e* is to be introduced into the dark cavity, and that the light is reflected by the mirror *a*, through the tube *e*, to the looking-glass *f*, by this it is thrown through the tube *d*, on the looking-glass *g*, and by it reflected into the dark cavity. The illuminated spot reflects the light back again to the mirror *g*, and by that it is conveyed to the eye of the spectator; of course the image of the illuminated spot is seen in the mirror *g*.

Whether or not this instrument can be ever so perfected as to be very useful, we cannot undertake to say, but it is evidently susceptible of improvement. When the cavity to be viewed is tolerably large, it may be of advantage to have the hole through which the object is to be looked at, in the looking-glass *g*, instead of *f*, as then the object itself will be seen instead of its image. The tube *e* should be larger, its aperture nearest the reflector should be as large as the reflector, for when the light is placed in the focus of the mirror, which is its proper situation, the rays of light will be reflected parallel, and if the tube is of less size than the reflector, a portion of the light will be lost. To collect all the rays, the double convex lens should be placed at the *aperture* of the tube *e*, nearest the mirror, not at some distance within the tube; and a little distance within the focus of this lens, a double concave lens should be placed so as to throw the rays of light parallel on the glass *f*. It will probably be found necessary to omit the lens in the tube *e*, as the vapour from the cavities will be condensed on it, so as to destroy distinct vision; this may in some degree, however, be avoided, by warming the lens before its introduction.

Our friend, Professor R. M. Patterson, has suggested to us galvanism as a means of illuminating dark cavities, and we have been endeavouring to devise an instrument for that purpose, but we have not as yet been able to have one constructed. I. H.

Cold Water as a Remedy in Severe Salivation.—We have received a letter from Dr. Andrew Haynes, of Vicksburgh, Warren County, Mississippi, recommending the application of cold water to arrest severe salivation. He writes that he has witnessed "the most decided and prompt abatement of the swelling and inflammatory symptoms in several cases, from pouring a gallon of cold water gently on the head and neck." "In cases," says he, "where gangrene was to be apprehended from the severity of the inflammation, I have prescribed the cold water to be repeated every three hours or oftener, with decided advantage."

We have no experience with the remedy in such cases; it is a well known fact, however, that cold and moisture are powerful agents in developing the mercurial action, and it will be remarkable if further experience should confirm its power to arrest its progress. The late professor Rush, in the yellow fever that prevailed in this city, in many cases where mercury failed to affect the system, and in which it was important that this should be speedily affected, applied to the neck of the patient, cloths wet with cold water, and generally with the desired result; indeed, sometimes the most profuse salivation was produced in an exceeding short period.

Morbid Alteration of the Crystalline Lens.—Our friend, Dr. A. De Leon, of Camden, S. C. informs us that he has recently, in a case of cataract, performed with success, the operation of extraction, on a man aged fifty-eight, in whom the lens exhibited the following appearance:—"On dilating the pupil with the extract of belladonna, I perceived a circumscribed yellowish appearance behind the uvea, rising a little above the transverse diameter of the pupil. I considered it as the lower portion of the crystalline lens of a darker colour than the upper portion. During the operation I discovered it to be the lens diminished to less than half the natural size, floating in a morbid liquor Morgagni, of a milky colour—the lens was the colour of virgin wax, and of but little softer consistence. Its capsule was free from opacity. In the ordinary examinations of the eye we did not discover this yellowish appearance, but there was a uniform pearl white colour, which we mistook for the opaque lens—there were no irregular spots nor streaks observable on sudden motions of the eye, or in viewing it in any direction.

The eye not yet operated upon, after repeated examination, exhibits no other appearance than the usual uniform opacity, seen in lenticular cataract. The patient has returned home with the delightful anticipation of *seeing* his family, after a deprivation of that pleasure for two years.

Dislocation at the Sacro-Iliac Symphysis.—Dr. Thomas Harris, surgeon of the United States' Naval Hospital, at this city, relates in the North American Medical and Surgical Journal, an interesting case of this rare accident. The subject, a delicate woman, ætat 35, was struck Jan. 27th, by her husband with his clenched fist on her sacrum. She immediately fell and was unable to rise, and experienced severe pain about the right sacro-iliac junction, accompanied with nausea and faintness. Professor Gibson was consulted, and found on examination a considerable hollow over the upper part of the sacrum; there was an aggravation of the pain when the right leg was moved, and a distinct crepitation. The slightest motion conveyed the sensation to the patient as if her hip bones were separating. These symptoms satisfied Dr. Gibson of the nature of the injury, he had the patient bled, directed an anodyne draught, and a soap plaster to be applied over the injured part.

The patient passed a restless night, but her bladder and intestines performed their natural functions, affording evidence that no material mischief was done to the spinal marrow. Dr. Gibson not finding it convenient to attend the patient, placed her under the care of Dr. Harris.

On the 3d of February the patient complained of rigors and pain on the slightest motion. On the 12th a roller was applied round the pelvis, which afforded some comfort; but two days after she complained that it caused uneasiness, and it was removed. On the 16th severe pain was felt in the right knee, similar to that experienced from diseased hip joint. On the 20th the patient accidentally moved her right leg, without producing crepitation or much pain. On the 25th, considerable improvement; a padded and quilted girdle, secured by a lacing cord, was applied around the pelvis. March 14th. On being raised in bed she was unable to remain in that situation for twenty minutes. April 10th. She was able to stand for a few minutes, and on the 4th of May, she walked down and up stairs.

The posterior projection of the ileum, and the corresponding depression of the sacrum remain very apparent. The latter bone appears to have been forced inwards about half an inch.

Boyer, in his Surgery, quotes from the Memoirs of the Academy of Dijon, a case of simple dislocation of the sacro-iliac synchondrosis, which is the only case that Dr. Harris has been able to find on record.

Case of Superfœtation, communicated in a letter to Dr. Chapman. By J. D. Guerarde, M. D. of Beaufort, South Carolina.—Abigail, a negro woman belonging to R. De Treville, Esq. of this town, was delivered of twins about eight years since—and what was very remarkable, they were not of the same colour. One of them, a boy, was black like the mother, and exhibited every other mark that denotes the pure and unmixed negro of Africa. The other, a girl, was brown, or of the complexion peculiar to the mulatto, or offspring of white and black parents. All that this woman recollects about the matter is, that she had separated from her husband some three years previous to the birth of her twins—that about the time of her conception, she was in the habit of receiving the amorous visits of a white man, while she did not hesitate at the same time, to grant her favours to one or more black men. She positively asserts that no two of them ever had commerce with her within the same hour. And she seems equally positive in maintaining that, notwithstanding the very marked difference in the colour of her children, they were begot by one man only—and grounds her opinion upon the circumstance of the twins having been expelled in quick succession from the uterus, and also upon that of the umbilical cords being both attached to one common placenta.

The fact of these children being the production of one labour, and possessing every appearance of having been begot by two men of essentially different complexions, is well known to many persons of respectability of this town, and the adjacent parish, where they were born. They are now living, with their mother, on the premises of the above named gentleman. No doubt, therefore, can exist as to the fact—but the question arises, how is the thing to be accounted for?

It is known to every body, that a bitch often brings into the world a litter of pups, partaking of the marks and other qualities of two or more dogs that had had commerce with her in the period of her venereal incalescence. The uterus of the woman undergoes very little sensible change till some days after the fecundation of the ovum takes place. Within that space of time, may not another ovum, one for example, belonging to the other ovarium, receive the vivific influence of the seminal fluid of the same, or of another man, and be conducted through the fallopian tube of that side, to the cavity of the uterus, in time to unite its vessels with those of the other embryo, so as to form but one placental mass common to both, as was found in the case just related?

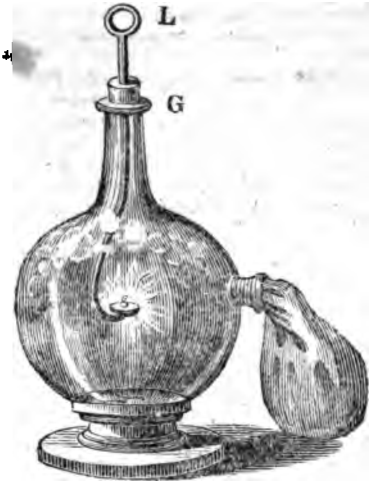
Can the case before us be termed an instance of superfœtation? Cases of superfœtation are mentioned by authors, but can scarcely be reconcileable with what is known to take place within the uterus soon after conception. The chorion spreads itself over the internal surface of this viscus, and closes completely both the openings of the fallopian tubes, and the os tincæ.

May it not be rational to suppose, that many twin children have lain erroneous claims to one common father, when the truth was hidden from them, only by reason of there having existed no difference in the complexions of those who begat them?"

The above case is interesting, but the author, we think, is not altogether happy in his illustration of the cause of the different colours of these children, by referring to what frequently happens to the bitch, since there is but little analogy between the modes of fecundation and the uteri of that animal and the human female. And we think him still less fortunate in his assertion, that "the chorion spreads itself over the internal surface of this viscus, (the uterus,) and closes completely both the openings of the fallopian tubes and the os tincæ." It is the decidua which closes the fallopian tubes, behind which the fecundated ovum must place itself before it can enter the uterus; and it is not until some time after this that the chorion is made to spread itself, and become united with the decidua, so as to occupy the cavity of the uterus completely. Consequently there will be no more difficulty at the end of several days after impregnation to be overcome by a second ovum, than there was for the first. Dr. Dewees has mentioned a similar case to the above in his essay on superfœtation. See Essays on various subjects connected with Midwifery, by W. P. Dewees, M. D. We must protest against the quere in his last paragraph, as it is calculated to do injury to the fair reputation of many honest and virtuous females. D.

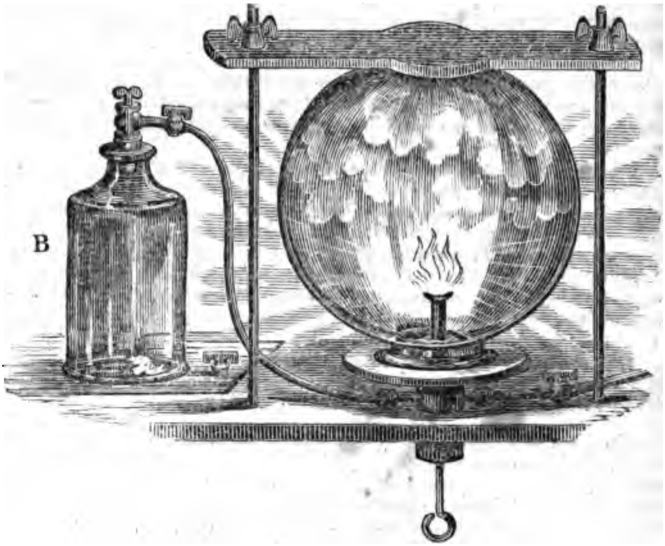
Influenza in Mexico.—We are informed that in May, 1826, an influenza prevailed in Mexico, similar to that which extended throughout the United States in the commencement of the same year. In April of this year, (1827,) a similar disease again made its appearance, and spread over an extensive district of country. What is remarkable is, that the disease appeared at a period when the atmosphere was exceedingly dry and mild, and the temperature of the days and nights nearly equable.

Description of an Apparatus for exhibiting the spontaneous combustion of Phosphorus in Chlorine, by means of which the lecturer can perform the experiment, without exposing spectators to the fumes. By R. Hare, M. D &c. &c. &c.



The handle of the ladle L, is so fastened into a cock, or stopple, as to be easily inserted, air tight, into the neck of the globe G, previously filled with chlorine, over the pneumatic cistern. The phosphorus being placed in the cup of the ladle, which is but shallow, the stopple may be put into its place before the action becomes sufficiently powerful to expand the gas. Hence, by the time that the gas is expanded by the heat evolved by the spontaneous combustion of the phosphorus and chlorine, there can be no escape of the fumes, unless into the bladder; which being emptied of air before the experiment, dilates sufficiently to afford them room.

Description of an Apparatus for the combustion of Phosphorus, in Oxygen Gas. By R. Hare, M. D. &c. &c. &c.



A brass plate, which answers as an extra air pump plate, and is of course, ground into a plane as true as possible, is supported on a hollow cylinder of the same metal. Concentric with the axis of this cylinder, and passing up through it, so as to reach about three inches above the plate, there is a gun barrel open below, but closed above, by a concave copper disk to which it is hard soldered. The gun barrel is fastened into the cylinder by a brass screw plug, into the centre of which the barrel is made air tight by solder. Hence although the bore of the barrel is accessible, from below, as far up as the concave copper disk, which surmounts it, no air can pass through it, or through the cylinder.

An adequate quantity of phosphorus being placed upon the copper disk, a glass globe is placed over it upon the plate; and by making one of the pipes which are attached laterally to the cylinder communicate with an air pump, the globe is exhausted. By means of the other pipe, a due quantity of oxygen gas is then let in, from the bell glass B, to which this pipe is annexed. The apparatus being thus prepared, the end of an iron rod previously reddened, in the fire, is passed through the bore of the gun barrel so as to touch the copper disk which holds the phosphorus. The most vivid ignition ensues. The light has at first a dazzling beauty, but is soon "shorn of its beams" by the dense white fumes of phosphoric acid, which the combustion evolves. Hence an effulgence, approaching to solar brilliancy, soon yields to a milder illumination, like that of the moon; which is rendered more pleasing by the contrast.

The globes with which I am accustomed to perform this experiment, contain from 12 to 15 gallons. It is better that the gas in the globe should be in some degree rarefied; otherwise the expansion at first excites a considerable effort in the air to escape. In one instance, a small piece of iron wire, with which the phosphorus was tied, took fire, and falling in a burning globule, on the neck of the globe, caused its fracture—at the same time the expansion was sufficient to throw the pieces to a distance of four or five feet apart.

The enlargement of bulk, arising from the heat, may be provided for by a bag or bladder, a communication with which being opened, allows a portion of the heated air to retire till the condensation of the oxygen, together with the phosphorus, into phosphoric acid, compensates the expansion.

This apparatus answers for an eudiometer, on a large scale, by connecting with it a barometer gage. When thus connected, in order, by means of it, to analyze the atmosphere, it is only necessary to exhaust the globe, and replenish it out of doors; so that the portion of air contained may be a sample of the purest attainable at the time.

Phosphorus being ignited in the air thus included, in the mode already described in the case of oxygen gas, after the residue is reduced to the same temperature as before the combustion of the phosphorus, the gage will show the degree of the absorption.

That it may be known when the previous temperature is regained, a thermometer, purposely placed within the globe where the graduation may be visible from without, must be consulted.

BARTON's *new Operation for Anchylosis.*—Dr. Barton was kind enough to bring his patient to us to-day, (July 20th,) that we might examine him. The motions of the new joint are more extensive than they were when we last saw him. He flexes his thigh on the pelvis more than he could, perhaps to an angle of about 120°, of course, when sitting, he is still obliged to bend his spine. The motions of the joint appear to give him no pain; he walks with a short stick, and without limping much. He walked several times across the room without the aid even of his stick, but limped a good deal in doing so. He went up and down a flight of steps with the aid of his short stick only, with great ease. His two limbs are nearly of the same length, but when standing, the side of the pelvis over the affected limb is somewhat elevated. When his legs are crossed, and his feet close to one another, he stands firm, and appears to bear an equal portion of his weight on each limb; but when his feet are together, with his legs parallel, he bears his weight principally on the sound, (left,) limb, and the pelvis of the right side appears elevated.

He informed us that a few days since, he walked from his residence to the Hospital and back again, a distance of three miles; occasionally, he amuses himself with his gun, and Dr. Barton was shown, on a recent visit to him, a number of birds that he had shot. After using much exertion, he, (Coyle,) says that he suffers from general fatigue, *but does not experience pain in the new joint.* The operation must be considered as eminently successful, and is highly creditable to the boldness, ingenuity, and skill of the operator. H.

Denarcotised Laudanum.—Since the publication of our last number, we have prescribed this medicine in numerous instances, and the favourable opinion we have already expressed of its properties has been fully confirmed. We feel convinced both from our own experience, and that of many of our friends, that it is the most valuable preparation of opium we possess. In a few persons it has produced the unpleasant effects that usually result from common laudanum, but in most instances, even in cases where the other preparations of opium could not be taken without the most distressing consequences, the denarcotised laudanum, has been followed by the happiest effects.

Broussais's Phlegmasies Chroniques.—A translation of this work is preparing for publication, by a physician of this city, who is well qualified for that task. It is intended to retain only the most interesting cases, and to condense the work so as to form one volume 8vo.—the last French edition from which this translation is made, is in three volumes.

MEDICAL SOCIETY OF PHILADELPHIA.

At the Meeting of June 16th, 1827, the following Preamble and Resolutions were proposed:

From the natural and excusable anxiety of persons labouring under disease, to seek relief wherever it may be found, it has happened in every age within the memory of man, that secret remedies, professing to be invariably successful, have enjoyed more or less vogue. The City of Philadelphia is at the present moment unusually well supplied with such nostrums, which, according to the representations of their inventers and venders, are as unerring as the established laws of nature. Though we feel a hesitation in admitting the claims to originality set up by those inventers, in consequence of their very imperfect opportunities of learning any thing connected with the science of medicine; yet we have but little doubt that they are possessed of articles known to the profession. It has frequently happened that medicines thus seized upon are amongst the most potent of the materia medica, and are pernicious or serviceable according to the skill with which they are used. Arsenic has formed the basis of most of the empirical cancer powders and plasters, and corrosive sublimate the base of the pills and syrups for syphilis and cutaneous disorders.

The enlightened and liberal physician has an important duty to execute; he has, when remedies are presented under imposing circumstances, to inquire into their merits, and to give them a candid examination; so that on the one hand, useful things may not perish by neglect, and on the other, such as are inefficacious or injurious may be justly understood, and avoided accordingly. He has also to watch over the interests of his own profession; and to be very well assured, before he will concede the point, that the greatest intelligence, opportunities, diligence, and zeal, in learning the treatment of diseases, may be surpassed at a single effort, by minds illuminated neither by native intelligence nor by appropriate and protracted studies.

No one who is acquainted with the history of medicine, can for a moment doubt the liberality of its followers in their intercourse with other conditions of people, or the readiness with which they make large sacrifices for the benefit of mankind. Most of the improvements in medicine are concessions to the cause of humanity. Physicians, in becoming the instruments of the dissemination of the vaccine disease, lost, by the consequent disappearance of small-pox, their most fruitful source of revenue, and an employment to thousands. Many examples of a similar description might be adduced, but this is sufficient to illustrate the disinterestedness and humanity of the profession: and to furnish a reply to a charge of selfishness, when its members are fastidious in adopting, or even rejecting nostrums and secret remedies; for the reason that they know not what they prescribe, and are always exposed to the chance of administering articles whose powers may vary continually from the caprice of their manufacturers.

The Medical Society, from the foregoing considerations, and with the view of gaining information upon the effects of the more popular empirical articles sold in Philadelphia, resolve as follows:—

1st. That a Committee of five persons be appointed, to inquire into the remedial value of the more prominent specifics now sold in Philadelphia, under the assumed names of Panacea, Catholicon, Minerva Pill, &c.

2d. That the order of inquiry of this Committee shall be, to address letters to the several regular practitioners whose certificates have appeared in behalf of such specifics, requesting a detailed statement of the information they possess in regard to the names, constitution, age, and previous treatment of the patients alluded to; of the diseases they have found those medicines most successful in, and of the diseases in which they have found them to fail.

3d. To obtain from all the practitioners of the city who have witnessed the exhibition of such medicines, well authenticated documents in detail concerning their effects in the several diseases for which they are given.

4th. To solicit from intelligent practitioners in the country, and members of this society generally, communications of a similar purport.

5th. To raise, by contribution and annual subscription, a fund to defray the expenses of the aforesaid Committee.

The Society adopted the foregoing preamble and resolutions, and appointed Drs. Horner, Harris, Jos. Clapp, Meigs, and Bell, as the committee on them, and with power to fill up vacancies.

Extract from the minutes.

JNO. R. W. DUNBAR, *Recording Secretary.*

CIRCULAR OF THE COMMITTEE.

Hall of the Medical Society of Philadelphia.

SIR,—We have the honour of calling your attention to the foregoing preamble and resolutions of the Medical Society, adopted at the meeting of June 16th, 1827. As these resolutions bear upon points all important to the interests of humanity and to the comfort and dignity of the Medical Profession here and elsewhere, it is hoped that you will make an early communication to the Committee of all such information as you possess and can with propriety impart. In addition to the information indicated by these resolutions, we should be pleased to learn the whole number of cases that you have seen treated with such medicines, or the treatment of which, properly authenticated, has come to your knowledge, and the evident effects produced on the functions of the system by them.

It has been thought unnecessary to present further interrogatories to you, from an impression that your own intelligence and candour will dictate the course, in your answers, best suited to instruct the Committee, and to qualify it to execute its duty in a way satisfactory to the society, and conducive to the end proposed.

We have the honour to be,
Very respectfully, your ob't. serv'ts.
W. E. HORNER, *Chairman.*
THOS. HARRIS,
JOS. KLAPP,
CHAS. D. MEIGS,
JOHN BELL,
Committee.

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ERRATA.

Page 241, 10th line from the bottom, for "24,000,000," *read* 2,400,000.
257, 20th do. do. for "bicuspid," *read* tricuspid.
271, 2d do. do. for "die Verdauung nach Versuche," &c. *read* Versuche ueber die Wege, &c.

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